DOCUMENT RESUME

ED 427 829 JC 990 132

AUTHOR Miele, Carol A.
TITLE Orthography and English as a Second Language in a Community College Pre-academic Program.
PUB DATE 1998-05-18
NOTE 201p.; Ed.D. Dissertation, Columbia University.
PUB TYPE Dissertations/Theses - Doctoral Dissertations (041)
EDRS PRICE MF01/PC09 Plus Postage.
DESCRIPTORS *Community Colleges; Educational Objectives; *English (Second Language); Instructional Design; Instructional Development; Instructional Effectiveness; *Language Skills; Learning Strategies; Linguistics; Second Language Instruction; *Spelling; Student Needs; Teaching Methods; Two Year Colleges
IDENTIFIERS *Orthography

ABSTRACT

This dissertation examines teaching and learning issues surrounding orthography in a community college setting. Spelling materials were designed in English and given to college-level English-as-a-Second-Language (ESL) students, with the goal of giving learners a means to integrate the experiences of speaking and writing English. Following an introduction to the study, section 2 of the dissertation contains a review of literature, focusing on linguistics foundations and pedagogical perspectives. Section 3, Methodology, covers learning materials and strategies developed for the study, a formative evaluation of participants (n=7), and data collection. Section 4, Instructional Content, explains lesson plans used in the research and supplemental class activities. Section 5 contains an analysis of student responses, with group and individual portraits and discussions on vocabulary, lesson design, and phonological issues. Section 6 presents major findings and pedagogical implications. The study reveals that students who have difficulty with English spelling respond positively to rule-based instruction aimed at increasing their understanding of the orthographic system. Findings also indicate that students with weak spelling skills also have limited phonological and lexical competence. Results highlight the need to address spelling in ESL classes. Appended are procedures for initial interview and interview questionnaires, lessons and lesson plans, and supplementary materials. (Contains 77 references.) (AS)

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ORTHOGRAPHY AND ENGLISH AS A SECOND LANGUAGE IN A COMMUNITY COLLEGE PRE-ACADEMIC PROGRAM

by

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ABSTRACT

ORTHOGRAPHY AND ENGLISH AS A SECOND LANGUAGE
IN A COMMUNITY COLLEGE PRE-ACADEMIC PROGRAM

CAROL A. MIELE

This dissertation reports the results of a study on teaching and learning issues surrounding orthography in a community college setting. The study involved both exploration of the domain of English orthography and instructional design. Spelling lessons based on orthographic principles outlined by linguists were created and used with typical students. Analysis of student responses to the materials and the instruction based on them yielded insights into the effectiveness of the materials and learning needs of the students.

The study revealed that students who have difficulty with English spelling respond positively to rule-based instruction aimed at increasing their understanding of the orthographic system. It was further revealed that students with weak spelling skills also had limited phonological and lexical competence. The results of the study indicate the need to address spelling in English as a second language teaching, particularly with this population. Based on these results, curriculum design and further development of spelling materials are suggested.

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TABLE OF CONTENTS

Chapter

I INTRODUCTION 1

II REVIEW OF LITERATURE 7

Linguistic Foundations 9
Pedagogical Perspectives 19

III METHODOLOGY 26

Lexical Materials 27
Conventions 29
Learning Strategies 30
Formative Evaluation 31
Participant Selection 31
Instructional Sessions 33
Data Collection Procedures 34
Data Analysis Procedures 35
Limitations 38

IV INSTRUCTIONAL CONTENT 40

An Overview of English Spelling 44
Content for the Lessons 54
Description of Lessons 56
Lesson 1: Facts about English Pronunciation and Spelling 56
Lesson 2: Short <i> in One-Syllable Words 58
Lesson 3: Long <i> in One-Syllable Words 60
Lesson 4: Long <I> in One-Syllable Words—More Long I Spellings 62
Lesson 5: Consonant Doubling 63
Lesson 6: Spelling Polysyllabic Words by Syllable Patterns 64
Lesson 7: Syllable Stress and Spelling 65
Lesson 8: The Sound-Spelling Relationship in Word Forms 67
Supplemental Activities and Materials 68
Vowel Sound Identification 68
Vowel Contrasts: Different Sounds Same Spelling 69
Short Vowel Discrimination 69
The Short Vowel Spelling Pattern 70

English Vowel Letters and Sounds: Long and Short Vowels 70

Chapter

V ANALYSIS OF STUDENT RESPONSES 71

Group Portrait 71
Individual Portraits 72
Danuta 72
Gauri 75
João 76
Kyung Hee 78
Sing Tak 80
Aviva 82
Natasha 82
Analysis of Responses 83
Rule-based Learning 85
Phonological Issues 100
Vocabulary Issues 111
Lesson Design 117

VI CONCLUSIONS 130

Major Findings 130
Pedagogical Implications 137
Spelling in Speech Classes 138
Spelling in Reading Classes 139
Spelling in Writing Classes 141
Spelling in Grammar Classes 142
Spelling in Supplemental Instructional Support 143
Directions for Future Research 144

REFERENCES 146

APPENDICES

A Procedures for Initial Interview and Interview Questionnaires 152

B Lessons with Lesson Plans 154

C Supplementary Materials 190

Chapter I

INTRODUCTION

For adults, learning a new language is often a strenuous and frustrating experience. They may face many inhibitions and may have ingrained habits, formed long ago in their childhood, which dominate their thinking and their speech patterns. To complicate matters even further, writing places its own demands on the learner. The relationships between spoken and written forms of the native and target languages may differ in major ways. Both the principle of writing and the symbols may be completely different, presenting complex and perplexing learning issues.

For learners of English as a second or foreign language, working with the written language and its connections to the spoken language can be especially burdensome. Native speakers of the world's languages need to struggle with English spelling, a system that is widely regarded as highly inconsistent and idiosyncratic. For some of these learners, the need to master an intricate code presents a seemingly insurmountable obstacle. Others manage to do the best they can, but their progress is significantly affected.

In a community college, immigrant students may have to spend added semesters in a pre-academic English as a second language program, or they may actually be prevented from continuing their education. Intelligent adults, even those with professional backgrounds, often undergo psychological and emotional pressure stemming from

difficulties related to poor written performance. Younger college students, who may even have faced a bright academic future before leaving their homeland, are inhibited by their inability to express themselves in written English.

Many of these students are weak spellers. For some of them, their poor spelling can make their writing almost completely incomprehensible, and that fact presents a problem for them as well as for the educational institutions they attend. In one community college, for example, a bright Israeli nurse in her 30s, working on passing certifying exams in the United States, found that although the English program was satisfactory in many ways, she could not find any instruction in spelling, which was her main weakness. She had been told that her writing was hopeless due to her poor spelling. In another case, a single mother from Afghanistan kept failing the program-wide exit exams because of poor writing skills and especially weak spelling. When she finally managed to pass, she was still hampered in her ability to write proficiently, and she was still struggling with spelling.

Both of these women had average oral proficiency. In contrast, there were the quiet and shy young men and women, maybe Korean or Chinese, who were not as fluent. Their oral skills were underdeveloped, and their pronunciation problems may have interfered with their abilities to interact orally with others. Their writing skills were also affected. Although they might successfully memorize the spellings of words one-by-one, their vocabulary level was low.

All of the students described here shared a common trait. Their English was limited, but their goals were not. They needed to live and work in the United States, and

they were striving for an education and the ability to participate in the society. The sketches do not correspond to any particular student but are a composite profile of typical students in a college setting. Their average age is between 28 and 38 years old. They may be recent arrivals in the United States or may have been living here for a long time.

There is also a new and growing group of younger students, however, who have attended American high schools but scored poorly on English placement exams. They may be required to take non-degree credit English as a second language for up to 2 years, mainly because of poor literacy skills. In the extreme cases, these students are so severely handicapped by their inability to command the written code that they can barely write a readable placement essay. The community college opportunity is open to these students; to make it worthwhile, curriculum development must be undertaken to meet their needs.

This dissertation is primarily a response to the concern and the distress of college students and an effort to address the pedagogical dilemma facing college teachers. English orthography presents a major challenge to learners, but has been largely ignored by most major teaching approaches. Teachers who would like to provide assistance to learners asking for help may lack knowledge about the subject as well as techniques and materials for teaching it. Incorporating the spelling as a subject in the curriculum could strengthen college ESL programs, but questions arise as to where it belongs and how to effect the changes.

The aim of this study was to design spelling materials English for college students of English as a second language and to use the materials with students to explore pedagogical issues surrounding spelling. Student responses while working with the materials would provide an opportunity to evaluate the underlying premise of the design: English spelling can be presented systematically. Furthermore, it is possible to present college learners with reliable points of reference for dealing with the orthographic system.

The goals of the instructional design were to sensitize people to the complex relations between the way English is spoken and the way it is written, and to build up awareness of the phonology of the language, giving learners a way to integrate their experiences of speaking and writing English. The lessons were designed to give students an overview of regularity and a sense of system in the orthography. It was necessary to take them beyond the highest frequency words in the basic vocabulary, the words that often have the most irregular spellings.

When my students' learning issues became my teaching issues, I was driven by their needs to explore English orthography and the pedagogical questions surrounding spelling. I became aware of the lack of instructional materials for adults in a community college who are learning English as a second language for academic purposes. I could not find instructional resources for adult students in an academic language program. I did not know what they needed to learn, so I could not design instruction for them. I began to explore regularity in phoneme-grapheme correspondences (on my own and with a colleague) and to try to adapt whatever pedagogical materials I could find to suit my purposes.

Chapter II of the dissertation outlines the research in English orthography, which provides the conceptual foundation for spelling lessons. In addition, this chapter surveys some perspectives on teaching spelling, both in elementary education and in English as a second language.

Chapter III explains the procedures involved in designing and developing units of instruction for spelling. In order to create the lessons, it was necessary to examine the instructional domain to arrive at an overall understanding of what needed to be taught. While descriptions by linguists and scholars provide a technical overview of the issues at minute levels of detail, these accounts in their non-distilled versions can appear daunting and inaccessible. Part of this dissertation involved compiling a pedagogically adequate description of English spelling.

Chapter III also discusses the implementation study done for formative evaluation of the instructional materials. This involved observational research with a group of representative students. The materials were used with these learners to assess the viability of the approach and to improve the instructional design as needed.

Chapter IV presents an overview of English orthography based on linguistic research with guidance for teachers. It is an attempt to provide a comprehensive and transparent survey of the components of a complex system for use in teaching. This chapter also outlines the spelling concepts chosen for the lessons designed for this study and describes each lesson.

In Chapter V, the group of students is presented with an analysis of their

responses to spelling instruction using the materials. Finally, Chapter VI concludes the study by discussing the major findings and providing recommendations for implementing spelling instruction in teaching English as a Second Language to adults in a community college setting.

Chapter II

REVIEW OF LITERATURE

Linguistic sources in the area of English orthography provided abundant support for this instructional design dissertation. This body of literature showed the totality and the complexity of the domain. Pedagogical sources that have applied the findings of the linguistic studies were also available. Educational researchers and reading specialists looking for ways to improve the teaching of spelling and reading have produced a considerable number of relevant studies. All kinds of instructional materials for children and adults, from both first and second language learning, served to stimulate the design of new materials in this area. English as a second language materials received particular attention along with textbooks for teacher training, which provided insights into views of orthography and classroom practices. Finally, computer-based resources for assisting students in spelling were also explored.

Many of the sources in linguistics and in teaching dealt with problems of analyzing and describing English orthography and the issues surrounding learning to read and write. The object of concern was the much-maligned system of transcribing English sounds and words into their written form. Reviewing the literature involved investigating

the history of the English language, the real source of all the complications we live with in the orthography today. Historians, such as Baugh (1963), have contributed major works; however, recently there has been an increasing interest on the part of a larger audience in this aspect of English. The popularity of works by McCrum, Cran, and MacNeil (1986) and Bryson (1990) demonstrated the fascination with the stories behind the development of the language.

Educators have also recognized the importance of knowing about the past events when dealing with English spelling. Furness (1964) and Henderson (1990), for instance, gave teachers and students historical accounts to explain the apparent disorder in the system. Increasingly, the colorful story of English is being told and exploited in teaching. Fargo (1992) recounted the story for adult beginning readers, and Robinson (1989) enthusiastically brought together the historical data for pedagogical purposes in her two-volume work entitled Origins.

Histories of writing systems were also fairly prevalent in the literature. Gelb (1952) and Sampson (1985) were major scholarly works on emergence and evolution of writing. MacKay (1987) and McGuinness (1997) have included sections on the principles underlying the various writing systems that have developed throughout the world. These accounts helped situate alphabetic writing as one type and to understand its characteristics in contrast to other types.

Historical studies and typologies of writing were sources of fascination involving ancient times and far off places. Tracing the development of the English language was an

encounter with the people and the dramatic events in a great story. Beyond being an enjoyable pastime, these explorations provided insights into the status of the language as it exists today. Nevertheless, linguistic analyses of English orthography and pedagogical practices based on the findings of linguistic studies provided the core support for the instructional design undertaken in this dissertation. Those studies as well as instructional materials for spelling are reviewed in the remainder of this chapter.

Linguistic Foundations

Writing was not considered an appropriate object for linguistic study for the first half of the twentieth century. Speech was the substance from which linguistic forms were abstracted and their interconnections analyzed. Writing was another instance of substance, but one that was not needed for the study of language. Written language, which had long been the focal point of linguistics, lost its dominance. According to Bloomfield (1933), language was speech and writing "merely a way of recording language by means of visible marks" (p. 21). He argued that speaking always preceded writing, and many languages existed with no written form at all. Those languages were "just as stable, regular, and rich as languages of literate nations" (p. 21).

This view of language, however skewed toward the spoken form, did not prevent the scholars from studying orthography. In fact, it probably engendered a new way of looking at writing systems. All writing represents speech graphically, so the characteristics of the spoken language influence the type of writing system. The ways in

which orthographic systems can represent speech has become of interest to linguists. It is one of Sampson's main concerns in his 1985 linguistic introduction to writing systems. He states the belief that "written language is a form of language. As such, it deserves to be treated with the methods of modern, scientific linguistic study which have been increasing our understanding of the spoken form of language for many decades" (p. 11).

The recent appearance of two major works on English spelling, Cummings (1988) and Carney (1994), is evidence of a new scholarly interest in orthography. Both authors indicate that pedagogical issues resulting from the complexities in the relationship between spoken and written English were to some extent involved in their decisions to undertake their studies. In fact, there has been a succession of researchers and theorists of language working in this field since the time of Bloomfield. Their work is at the center of the literature in English orthography, spelling and reading. These analyses have explored the various aspects of a complex system; they have been able to show aspects of the order that makes the orthography of English a system.

The first major study was the United States government-funded research into regularity of phoneme-grapheme correspondences done at Stanford University between 1949 and 1966 by a team of researchers headed by Paul R. Hanna. This project examined the alphabetic nature of American-English orthography with the intent to reveal "the relations between the phonological structure of spoken language and its representation in orthography" (Hanna et al., 1966, p. 20). Using a computer and a corpus of 17,310 words, the researchers were able to tabulate the frequency and percent of phoneme-grapheme

correspondences, the position of the correspondences in syllables as well as the effects of syllable position plus stress on regularity.

There are findings in the study illustrating the degree to which the individual phoneme-grapheme relationships of English approximate the alphabetic principle. The rate of consistency for vowel phonemes is 62%. This figure includes instances of phonemes with as many as 22 graphemic options (/i/ and /[illegible]/[1]), as well as one phoneme with only two: /ç/). The rate of consistency for consonant phonemes is 84%. This figure includes those with only one option: /hw/, /[illegible]/, /[illegible]/, /ð/, and those with multiple options, e.g., /[illegible]/ with 15. Finally, the mean percentage of phoneme-grapheme correspondence for all phonemes is 73%. This percentage excludes the factors of position and position combined with stress (p. 100).

When position of the phoneme in a syllable was taken into consideration, the degree of consistency increased to 79%. This phenomenon can be illustrated with the phoneme /i/. Of the 22 graphemic options, the letters <i> and <y> are used 91% of the time. Of these two options, <i> occurs in initial position 89% of the time and in medial position 82% of the time. In final position in syllables, <y> occurs 60% of the time (p. 99).

When both position and stress were taken into accoúnt, the level of predictability rose to 84%. Using /í/ once again as a example, the report indicates:

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[1] A notational convention used throughout the dissertation is enclosing spellings in < >; parentheses or slash marks are used to indicate sounds. Conventions are explained in the Methodology.

> <i> represents /ĭ/ over 98% of the time in initial position in primary accented syllable, over 86% of the time in initial position in unaccented syllables, and is the only graphemic option representing /ĭ/ in initial position in secondary accented syllables. <Y> meanwhile does not represent this particular sound at all in initial position of syllable, except in five rarely used words, *larynx, onyx, pharynx, polyp, and sibyl.* Furthermore, when final position is analyzed for the occurrences of <i> and <y>, these options occur in final position only in unaccented syllables. (p. 99)

The study also attempted to determine whether the statistical data on occurrence of correspondences actually support the ideal that knowledge of the most frequent representations of phonemes and consideration of phonological factors alone suffice to spell English words. Therefore, in Phase II of the study, the computer was programmed to spell the words in the same corpus from the phonemic spelling using a series of rules. The algorithm used to define the spelling process was a set of two hundred rules formulated on the basis of the data obtained from Phase I. In addition to rules related to correspondence, position, and stress, the researchers attempted to include the effects of what they called environment factors, i.e., certain phonemes occurring in relation to other particular ones have a predictable graphemic representation. For example, /ey/ in medial position and stressed followed by /l/, /m/, or /n/ is spelled <ai> as in <mail>, <maim>, and <main>. These environment rules were not determined by statistical analysis, but by examination of the word lists.

In this phase of the research, it was determined that 49% of the words (8,483 out of 17,009) could be spelled correctly on a purely phonological basis. The data show that 36% (6,195 words) could be spelled with one error, e.g., *chalenge (challenge), proseed*

(proceed), regamen (regimen), 11% (1,941 words) with two errors, e.g., *apraes (appraise), baes (beige); mabee (maybe), laf (laugh)*, and 2% (390 words) with three or more errors: *aentiont (ancient), baras (barrage), licuiez, (likewise), sikiitrist (psychiatrist)* (Table 22, p. 119; N.B. total percent less than 100 due to machine rounding). (Examples taken from Hanna et al. [1966], Appendix I. Error Listing from Algorithm, pp. 1109-1714.)

The 49% regularity seems like a disappointing result, and the researchers acknowledge that an analysis of the errors indicate the need to consider morphology and syntax as they affect spelling. However, critics have pointed out that the problems with the study may not be solved in that manner. Carney (1994) has a very informative discussion of the strengths and weaknesses of the Hanna study. Carney demonstrates how the flaws in the underlying analysis of the orthography have led to questionable statistical results. For one thing, syllable-based rules are used and syllable boundaries given to the program are from dictionary conventions for printing. This raises numerous questions, which Carney discusses in detail (p. 89). Other equally or perhaps more troublesome problems in the rules stem from the descriptive approach used by the researchers. They attempted to describe detailed rules for individual phonemes and neglected to take into account general rules, such as consonant doubling to mark short vowels and <e>-marking of long vowels.

Carney maintains that the weaknesses in the analysis of the baseline data call into question all of the statistical results of the study. However, he says that seeing problems does not amount to a complete rejection of the research. He suggests further evaluation

and includes the Hanna rules in his own description for each phoneme. Therefore, readers have the opportunity to see them and try them out.

Despite the controversies and criticisms, the research done by the Hanna team remains a major contribution. Their statistical documentation of the major phoneme-grapheme correspondences, though problematic, makes it possible to say what constitutes regularity at this level. It was always possible to list graphemic options for the sounds of the language (dictionaries contain such lists), but from this study it is possible to see the frequency and percentage for each option. Thus, major and minor correspondences (Cummings, 1988) can be distinguished, and researchers can refer to the Hanna et al. statistics to support their analyses.

The fact that English spelling has a phonological base that can be seen as consistent 80% of the time leaves open the question of the remaining 20%. Are there other bases for systematicity that are not phonological? Exploration of this question has led to the acceptance of a lexical base in the spelling system. Where spelling is phonemically irregular, it is often morphemically regular. The preservation of the morphemic identity of words provides another level of regularity to the orthography. Examples of graphemic stability despite phonemic alternation abound: *combine/combination, harmony/harmonious, sign/signal/signature* exemplify this principle.

Venezky (1970) countered the view that the English writing system is in some way flawed because of its striking deviations from the alphabetic principle of one symbol for each phoneme. This analysis shows that the orthography of English is both phonemically

and morphemically based. It posits a series of rules to demonstrate the complex relations of underlying morphemes with ultimate phonemic representations. Venezky's morphophonemic analysis shows how a written word generates its spoken version via an intermediate level, which "serves to separate graphemically dependent rules from grammatically and phonologically dependent ones" (p. 46).

For Venezky, regularity within the orthographic system is defined in terms of predictability. Furthermore, correspondences are predictable to the extent that they are described as "patterns of graphemic, morphemic, syntactic, and phonotactical processes" (p. 127).

Venezky's work exemplifies an effort to identify complexity and reveal order within it. By incorporating the morphological base and morphophonemic processes, e.g., the process of palatalization and the voiced-voiceless alternations, it is possible to account for major apparent irregularities in sound-to-spelling correspondences of English. For example, palatalization occurs when /t/, /d/, /s/, /z/ are followed by /j/ + an unstressed vowel. This sequence of /tj/, /dj/, /sj/, /zj/ (on the morphophonemic level) leads through assimilation to /tʃ/, /dʒ/, /ʃ/, /ʒ/ (p. 93). Examples are *nature, pleasure, cordial.* Voiced-voiceless alternations are also predictable and can be categorized into classes. Noun plurals (*houses, boys, cats*), for example, are phonetically conditioned alternations unmarked in the spelling. Other alternations include noun-verb: *belief/believe, breath/breathe*, and ordinal-cardinal: *fifth/five.*

Perhaps the most far-reaching claims for rationality in English orthography have

come from Noam Chomsky and Morris Halle. In exploring the phonological component of the theory of transformational generative grammar, Chomsky and Halle (1968) describe in considerable formal detail phonological rules that generate phonetic forms from abstract underlying representations. They claim that conventional orthography closely approximates these abstract mental forms.

According to this theory, the words of the spoken language are represented in the mental lexicon in an abstract form, which provides only information that is not predictable by phonological rules. This abstract form, the "lexical spelling," preserves underlying semantic identity of words having surface phonetic variation. Word pairs such as *nation/national, revise/revision, courage/courageous* are recognized as forms of the same word, though phonetically variant. It is true that the abstract lexical representations are modified, sometimes drastically, when the phonological rules are applied. At times, the resulting phonetic representation "bears little point-by-point resemblance to the underlying form" (Chomsky, 1970, p. 8). Nevertheless, orthographic relatedness is obvious, and speakers of the language who know the phonological rules also recognize the consistency.

Chomsky and Halle (1968) claim that "conventional orthography is...a near optimal system for the lexical representation of English words" (p. 49). By representing the abstract lexical forms, the orthography "leads directly to semantically and syntactically significant units, abstracting away from all phonetic properties that are determined by general rule" (Chomsky, 1970, p. 12).

The two most recent contributions to the literature on English spelling, Cummings

(1988) and Carney (1994), both synthesize much of the classic research mentioned here and include extensive bibliographies of works related to written language. As mentioned earlier, these works are evidence of a new interest in orthography. They provide comprehensive and detailed views of a complex domain. Both authors present clearly the theoretical foundations of their approach, and both include correspondence rules for the phonemes.

Cummings' American English Spelling was the first of its type. He describes spelling in terms of tactics and procedures as well as correspondences. From his analysis, the whole system can be discerned. His account includes tactical rules describing patterned regularities in the system, as well as procedural rules governing the combining of elements in the formation of words (p. 9). Tactics relate to such things as sequences and distributions whereas procedures refer to silent final <e> and its deletion, among others. The correspondences, defined by Cummings as "the conventionalized relationships that exist between sounds and their spellings" (p. 10), result from the tactical and procedural rules.

Cummings provides a comprehensive description of English spellings, like Venezky (1970). A major difference is that while Venezky was concerned with reading written words, Cummings starts with spoken words and is concerned with how they are written. This theoretical perspective has been described by Aronoff (1989) in his review of the book as a novel one which "does bring out some aspects of English spelling that are obscured by the more usual emphasis" (p. 592). Aronoff's review contains many thought-provoking ideas: they are from a linguist commenting on the work an English teacher writing "on the

borders of linguistics" (p. 591).

For one thing, Aronoff discusses Cummings' position on the status of writing in language, a position in the tradition of Josef Vachek. Rather than being secondary to speech, writing is treated as parallel to speech. Cummings sees orthography as one of the autonomous but interdependent systems of American English, the others being morphology, phonology and syntax. For Aronoff, viewing writing as equal to speech does not lead to a clear understanding of a writing system as a form of notation largely dependent on the language it encodes. Certain features of writing are explainable with reference to the phonology of the language. Other features of writing are orthographic facts that are separate from the phonology. Finally, there is an interaction between the phonology of the language and its representation in the writing that determines many orthographic features. It is Aronoff's contention that Cummings' analysis would have been strengthened if his perspective been had reflected the more widely accepted view of the status of writing.

Cummings' work has been described elsewhere (Templeton & Bear, 1992) as an important reference. It is clearly a resource for educators who may wish to teach the orthographic system of English. Whether or not one agrees with Cummings' answers to theoretical controversies that arise in his attempt to analyze this complex aspect of the language, his work helps to reinforce the idea that English spelling is a rational system that can be taught.

The more recent publication, A Survey of English Spelling (Carney, 1994), provides the most authoritative and scholarly treatment of English spelling to date. The author, a

professor of phonetics at the University of Manchester, uses a functional approach to describe English orthography. One of his great achievements is his treatment of the problems of both reading and spelling. His book contains an analysis of speech-to-text correspondences, phoneme by phoneme, as well as text-to-speech rules, letter by letter.

Carney's critical survey of methods and problems in describing written English brings together the major issues in a very complicated field. His work is a reference book for linguists and teachers of reading and writing. It covers theoretical and practical concerns. In my research for this study, I discovered Carney (1994) at a late date, after much hunting through the literature had already been completed. It would have been an enormous help to have had this important survey from the outset.

Pedagogical Perspectives

The applications of the findings of linguistic studies of English orthography to teaching are familiar to many educators. The eventual goal of Hanna and his colleagues was to improve spelling instruction. Venezky outlined the structure of English orthography in order to further reading instruction. Carol Chomsky's (1970), attempted to clarify some of the complex theories of Chomsky and Halle (1968) and to show how the lexical nature of English orthography might relate to reading instruction. In other articles, C. Chomsky (1971a, 1971b) explores the relationship between phonological knowledge and learning to write and read.

Henderson (1990) advocated direct teaching of spelling to children throughout their

elementary schooling within an enriched language learning environment. The connections between phonology and invented spelling in pre-school children provided the key to his pedagogical approach. Research with children has shown that they progress through developmental stages in the acquisition of orthographic knowledge, and that these stages mirror the levels of orthographic patterning that exist in the language. Formal spelling instruction is synonymous with word study. To teach spelling is to teach the vocabulary of the language: word knowledge is central to reading and writing, and spelling instruction is central to word knowledge.

Henderson and Templeton (1994), an eight-level spelling program for elementary school, is an example of instructional materials developed for use in teaching the entire multilevel orthographic system as it has been described by linguists. As children progress through the primary grades, they are taught spelling level by level. On the phonemic level, there is one-to-one sound to letter correspondence as well as correspondences between patterns of letters and sounds often determined by environment or positional factors. On the morphophonemic and/or lexical level, meaning is the ordering principle, rather than sound. The authors of the series have succeeded in basing their series on a pedagogically adequate application of the theoretical descriptions of various linguists and educational researchers.

McGuinness (1997) has also made use of a great deal of new scientific research in linguistics, psychology and education to formulate a new way to approach the teaching of reading. According to her, neither whole language nor phonics will suffice, as neither of those approaches takes into account new data now available on the structure of the writing

system. Among other strong points, she explains that structure and shows how to design reading programs around it. One of her main points is that "the way a writing system is designed determines how it should be taught" (p. xiii).

Recognition of the pedagogical problems surrounding spelling for adult students of English as a second language has been growing. Orthography is being reconsidered within the context of communicative language teaching. The dilemma of the teacher of writing in English as a second language mirrors that of the teacher of Adult Basic English. Shaughnessy (1977) and McAlexander, Dobie, and Greg (1992) are two works from this closely related field that deal with spelling. McAlexander et al. provide further evidence of the increased interest in addressing the issue. This text follows a pattern common in the works on spelling. Similar to McGuinness (1997), it begins with theory, discussing the background of the spelling system and comparing it to other writing systems. Like Carney (1994) and so many others, it discusses the irregularity of English spelling with respect to historical development. This manual for teachers of basic writers explains different types of spelling errors: rule (**likeing* for *liking*), semantic (*led* for *lead*), and morphological (**beautifull* for *beautiful*). There are also analogy errors (**alright* spelled like *already*), and motor errors, which occur for physical reasons such as writing too fast or automatically writing a familiar but incorrect pattern, e.g., writing *their* for *the* (pp. 17-18).

In the teaching of English as a second language, on a least one occasion recently, spelling has come up as a subject of discussion among teachers on an electronic bulletin board, TESL-L. The topic typically elicited comments like "students should take care of

the problem by themselves" or "students have been able to improve their spelling using an electronic spell checker." Another comment, "I don't know how as a ESL teacher I can teach my students spelling" probably typifies the predicament of many.

One solution could be found in Gattegno (1977). This pamphlet shows how to teach spelling using English Language Fidel, a representation of sound-letter correspondences, color-coded for use with the Silent Way technique for teaching English as a second language. The chart has columns listing all sounds of English and all their graphemic representations. The signs at the tops of the columns are the most common ones for the sound. According to Gattegno (1977), the Fidel displays the reality of English orthography arranged systematically"(p. 4). The teacher or the learner moves a pointer from sign to the sign to spell words.

For instructors who are unfamiliar with Silent Way teaching techniques and materials, there is a small number of spelling workbooks aimed at learners of English as a second language (Bassano, 1980, 1980a, 1983; 1983a; Kirn, 1986, 1988; McClelland, Hale, & Beaudikofer, 1979). These works cover the elementary spelling only. Their scope is limited for adult college learners who want to progress from simple to complex spelling. Also, these materials tend to be slightly juvenile in presentation for adults, utilizing many cartoon drawings. Bassano (1980) and Kirn (1986) have audiocassettes to accompany the text making them appropriate for independent use by students.

Kirn (1988a) is an enlarged version of Kirn (1986), covering more of the orthographic system. It includes more vowel spellings, homophones, and multisyllable

words. The text marks exercises that are more challenging and more suitable to advanced learners. Some of the exercises are meant for listening, so the user of the text is advised to have them read aloud by a native speaker. An effort has been made to provide a variety of exercise types, including puzzles and stories. This book is also illustrated by many small cartoon drawings.

Vernick and Nesgoda (1980) is another textbook that could be used in teaching spelling. The authors have combined the teaching of pronunciation and spelling in a treatment that is comprehensive and rule-based. The text contains a great deal of practice material for the learner. The presentation is in stark contrast to the works by Bassano and Kirn described above. It is very technical and very sophisticated.

Morley (1991) surveys trends in pronunciation teaching in English as a second language. She points out that there has been an increase in attention given to using the sound/spelling relationships in teaching adults. She also mentions that course books are increasingly including sections on orthography, starting with Prator and Robinett (1985), in which the last lesson is on regular and irregular spellings. Orion (1997), a student pronunciation textbook, begins with a chapter on the spelling system.

Teaching reference materials and manual also include sections on spelling. Avery and Ehrlich (1992) begin with a brief discussion of spelling and pronunciation. They point out the need to distinguish sounds from spellings and show how the complexities of sound-letter correspondences explain the need for a phonetic alphabet. Celce-Murcia, Brinton, and Goodwin (1996) also include a chapter on orthography. The authors have recognized that

the problems of the writing system, particularly in the light of Chomsky and Halle (1968), should be understood by teachers and taken into account in the teaching of pronunciation.

Nowadays, computers are also providing a means to assist students with pronunciation and spelling. For instance, ELLIS Senior Mastery (1994), an interactive multimedia program, can be used to establish student awareness of English phonemes. In one section of the program, the user can listen to sounds and see their representation in phonetic notation. Then examples of words containing the sounds are provided in spoken and written form. The focus is actually on the pronunciation, with a limited number of spellings given and no explanation of spelling issues.

The new research in English orthography is having an effect on teaching. Written English has regained some ground as linguistic analysis has shed light on its complex structure. Morley (1991) states, "It is essential that ESL students learn to relate spoken English and written English quickly and accurately if they are to become truly literate in English." If this position reflects the trend in teaching English to non-native speakers, students, already experiencing the need to integrate phonology and orthography, will receive more of the help they are seeking.

As an instructional domain, English orthography still presents a major challenge. Although progress has been made, there is much work to be done. Most instructors lack the knowledge base that is available from the sources reported in this review of the literature. This dissertation includes an attempt to extract the essential elements from the linguistic and pedagogical sources and to display them for pedagogical purposes. It is an endeavor

aimed at answering the question: What do teachers need to know about spelling if they want to teach it?

Using the display of the orthographic system, typical units of instruction were developed and evaluated with a group of community college students of English as a second language. In using the materials with students, the following questions were addressed:

How do learners respond to rule-based learning of English spelling?

What do their responses reveal concerning the strengths and weakness of these instructional materials for the target population?

Chapter III

METHODOLOGY

The process of developing the materials for teaching spelling to adult students of English as a second language in a community college began with the compilation of an overview of English orthography. After compiling this overview of the system, it was possible to extract the rules or patterns that would form the bases for lessons to illustrate generalities at various levels of the system. In Chapter IV, the overview is presented and discussed. After that, the concepts covered in the lessons as well as the lessons themselves are described.

All of the other steps in the instructional design process are covered in this chapter. First, issues surrounding choice of lexical materials were considered. Then it was necessary to explore transcription systems for representing the sounds of English and to choose a system that would be optimal for use with second language learners. In addition, the pedagogical approach and learning strategies were determined.

Finally, the implementation and evaluation procedures were planned. They involved collecting student responses to instruction based on the materials. Throughout several instructional sessions, the participants were filmed working together with an

instructor. The data collected during the sessions were analyzed with respect to the objectives and the content of the lessons.

Lexical Materials

To illustrate the spelling patterns, lexical material had to be selected. Which words and how many should be chosen and what, if any, other principles would guide the selection were important concerns. While an adequate number of examples had to be used to show the pattern, the question of known versus unknown vocabulary was pertinent. Also, how the choice of words would affect the interest level of the exercises for adult learners was a consideration. If only the simplest words were chosen, there would not be an adequate number of examples and the level of interest would be low. On the other hand, if the students did not understand the words, their attention could be distracted from spelling as they negotiated the meanings of new words.

The issue was resolved in favor of a selection of typical words presented in such a way that vocabulary development would be integrated with spelling instruction where appropriate. The presentation of spelling concepts would utilize only the simplest words, but for the practice exercises any words exemplifying the target concept would be used.

The decision to choose freely from among the words exemplifying the target-spelling concept was made after an extensive search of the lexicon. Considering all possible sound patterns generated comprehensive lists of one-syllable words. The words on the lists seemed to be common vocabulary words; perhaps some were beyond the

scope of beginners, but should not remain so for college. It seemed like a good idea to choose somewhat freely from the available lexical items and give the students the chance to work on meanings and spellings simultaneously when necessary.

Whenever possible words with related meanings were used in written activities. The idea was to create a context that might provide clues to the meanings of the words. For example, the words *blink* and *squint* were required in the following item from one of the lessons: In the bright sunshine, without sunglasses, we cannot keep our eyes open. Sometimes we _____ our eyes, or maybe we have to _____.

For inflectional spelling, words were chosen with the same semantic criteria in mind and with the additional requirement that the words are subject to affixation with *-ed*, *-ing*, *-er*, or *-est*. Monosyllabic words with short and long <i>, such as <grin>, <wipe>, or <white> were chosen to illustrate how the sound patterns of the base word determine the inflectional spelling patterns.

In making the lists of polysyllabic words to demonstrate the spelling of the target sounds in stressed syllables, words with long and short <i> with -VC-C- and -VC-V- at syllable boundaries were chosen, e.g., <winter> and <sister> versus <pilot> and <tiny>. In this case, no attention was given to the semantic value of the words, and most of the ones used in the lessons presented no comprehension difficulties.

Finally, the words for the derivational spelling lesson were selected in the same manner as the non-derived polysyllabic words. That is, words with particular characteristics were found by exploring sound patterns and vowel contrasts. In this

instance, again long lists of words were compiled to investigate their sound and spelling patterns in order to arrive at a representative sample of words to use for the lesson. It was not possible to be concerned with the meanings of the words since they were the only ones available to demonstrate the point. Here as in the other lessons, the students would have to be familiar with or learn the meanings of words to work with spellings.

Conventions

In addition to choosing the conceptual content and lexical materials for the lessons, it was necessary to choose a system of representation for the sounds of English. For the purpose of spelling instruction, orthographically motivated (OM) symbols similar to those used in American English dictionaries were useful. Theoretically, each symbol represents the most common grapheme associated with the sounds and diacritical marks are used to distinguish the vowel sounds (Hill & Pearsons, unpublished). Following dictionary conventions, parentheses were used when OM symbols appeared in the instructional materials. In certain parts of spelling instruction for adult learners of English as a second language, a phonemic transcription system is also needed to display the sounds clearly. In those areas, an alternative International Phonetic Alphabet was used. Slashes were used to enclose IPA symbols.

The underlying rationale for an OM system is compatible with the instructional goals of spelling materials. There are other features that may also be exploited effectively. For instance, the system divides vowels into "long" or "name" vowels and

short vowels. This terminology is commonly used in spelling instruction, as is evident in pedagogical materials for elementary schools. It seemed logical to try to use it with the target population.

Learning Strategies

Lesson design and learning strategies were tailored to adult college learners and to the nature of the instructional domain. Use of a cognitive, deductive mode of presentation allowed students a chance to explore the orthographic system and its relations to the phonological component of English. Through direct explanations, students could examine segments of the domain in an organized fashion, identifying regularities and creating bounded categories for learning a complex field of knowledge.

Each lesson contained a rule, followed by explanations and illustrations of the rule with examples and/or charts. The activities suggested to the learners had various objectives. Some were aimed at listening and phonological discrimination. These were usually accompanied by pronunciation practice. Rhyming word lists were used to provide aural/oral reinforcement of sound and letter patterning. When used as reading exercises, the lists could stimulate visual reinforcement as well. Written exercises provided the learners the opportunity to test their understanding of the concepts. For the most part, these exercises were fill-in or transformation activities.

Formative Evaluation

Research was conducted to assemble data to answer the research question: How do learners respond to rule-based learning of English spelling? The student responses during instructional sessions arranged for the study were used to evaluate the materials developed using the description of English spelling compiled from linguistic and pedagogical sources in the literature.

In this phase of the research, the materials themselves, the actual artifacts created for the study, were used as the basis for teaching the concepts. The instructional materials were designed for use by students with a teacher in order to find out whether the content and activities were viable and useful for learning.

Participant Selection

I was the materials writer, the researcher, and the teacher of the spelling classes. As a participant-observer, I was able to note the participant responses to the materials and the content of instruction. The student-participants were selected from classes of English as a second language at a community college in New Jersey. The college has an American Language Program, a four-level college-preparation course. Students must complete the program in order to be eligible to take other courses in the college.

In the Fall of 1995, teachers of American Language II and III were asked to refer potential participants--intermediate and advanced students who seemed particularly troubled by poor spelling and unable to comprehend the spelling system of English. Some instructors had explained the study in class and had referred student volunteers to me. Other instructors simply referred to me their "problem spellers."

Of 20 students contacted, 13 agreed to interviews. Of this group, seven were chosen for the study. Students were selected for their interest in the subject and their willingness to make a commitment to the study. Among the students I did not select were those who did not seem to understand the point of the study or were simply not interested (some of them were looking for help in composition writing). For other students, time conflicts prevented their attendance at all the sessions.

During the interviews, I asked the students to describe their problems with English spelling and to discuss any efforts they had made to solve their problems. I also asked whether they had received any formal instruction in English spelling and whether they thought that studying spelling rules would help (see Appendix A, Interview Questionnaire for Participant Selection).

The student responses to the interview questions enabled me to identify the students who met the selection criteria. Their interest in the subject was evident. They had a basic command of English, but they had been given no systematic instruction in spelling. They were concerned that their progress in gaining proficiency was being hampered at least in part by their problems with written language. Some of the informants indicated that their spelling problems stemmed from their inability to pronounce English distinctly or from general struggles with vocabulary development. Others did not indicate pronunciation or comprehension problems but had been unable to master any techniques to help them with serious spelling problems.

The spelling group eventually consisted of seven participants, five female and two

male, ranging in age from 21 to 38. There was no common country of origin or native language. The students came from India, Poland, Portugal, Russia, Israel, Korea, and China. All but one of the students had received some post-secondary education in their native country. The exception had left her country shortly after completing secondary schooling. The length of time they had spent in the United States varied between 1 and 10 years. They were all community college students and all were in the American Language Program, except for one who had completed the course the previous semester. They were at the intermediate or advanced level.

Instructional Sessions

The group met in the English Language Resource Center, a multimedia computer lab for English as a second language, at a time when the facility was not open for normal use. The room is a medium-sized classroom converted into a learning center where one-to-one tutorial sessions and computer-assisted instruction take place. The 12 computer workstations are located around the perimeter of the room. The center of the room is occupied by six square modular tables, which seat four people. All of the resources of the center were at the disposal of the learners during the sessions, including the multimedia computers with language learning software and electronic portable dictionaries.

Students attended 8 one-hour sessions once a week on Tuesdays from 3 to 4 p.m.. The spelling series covered half of the semester (15.5 weeks), from March 5 to April 30, 1996. Spring break took place between the fourth and fifth sessions of the series. Students were involved in program-wide exit testing during the last two weeks.

The sessions were planned to correspond to the lessons, with one session for each. However, more time was taken to address the issues that arose after the first lesson, which seemed to be of major significance to the learners, specifically questions of pronunciation and auditory discrimination. Also, after five sessions, a group interview session was held to elicit evaluative responses from the participants (see Appendix D, Session List and Calendar).

Data Collection Procedures

A systematic analysis of videotaped recordings of the sessions would provide insights into the quality of the learning experiences resulting from instruction that was based on the materials. To enable filming the sessions, the group sat around a long, narrow table, three students on each side, one student and the teacher at either end. The camera was located behind the teacher so that the recording could capture the students' actions to as much extent as possible. It remained stationary and no one manipulated the camera during the sessions. There were audiocassette recorders on the tables to provide a backup of talk during the sessions.

For the most part, the videotape recordings were successful in capturing the activities and the sounds of the sessions. There were, however, two occasions when the video camera did not function properly. For those two sessions (sessions 2 and 6), no videotapes were made; therefore, the audiotapes alone had to be used for data analysis.

In the participant selection process and throughout the study, I made notes of student comments when they were made outside of recorded sessions. Also, I conducted

two feedback sessions, one after the first five sessions of the series and one at the end in order to obtain further supporting evidence for interpretations made in the analysis of videotaped data.

Data Analysis Procedures

Once the fieldwork was completed, the videotapes made it possible to return to the site and to relive the scenes as an observer. The taped record of the sessions could be viewed and reviewed to identify and analyze the most salient patterns of student responses. The first viewing involved writing content transcriptions in which the major events were noted. From these global descriptions, the important points for the analysis began to emerge. The general atmosphere during the sessions and attitudes of the learners were noted as well as the momentum of the learning process within and between sessions.

Various kinds of student responses were examined. They ranged from quietness to lively individual participation and group discussions. Detailed categories for characterizing the responses were devised, including verbal and non-verbal, individual and group responses. Verbal responses consisted of comments, questions, and oral practice as well as written work. Oral production, such as reading aloud or repeating words, occurred as part of practice exercises and/or activities provided for reinforcement of target concepts.

Written responses involved dictation, cloze exercises, and transformation activities. In many instances, the written production was accompanied by oral practice,

i.e., students would pronounce the words before or after writing them. Non-verbal responses, such as nodding, smiling, and laughing, were typical throughout the learning sessions. There were also silent moments (with or without eye contact) when the learners seemed reluctant to respond. For the most part, an analysis at such a detailed level was not considered necessary. The precise meaning of non-verbal behavior could not be determined and most likely would not be particularly revealing for the purposes of the study. Where such behavior could add to the description of the learner responses to the materials, it has been included.

Other response categories were related to types of participation, such as group and individual. In oral practice, there was a great deal of choral repetition. In addition, there was often group interaction to solve problems or explore issues. At times one or more students would use print or electronic dictionaries to find information for the group. There were also many instances where particular students addressed their particular learning problem. Furthermore, there were guided as well as independent activities. On some occasions, the teacher and students worked together, as during review and/or presentation of information. On other occasions, the students worked independently without the teacher.

A log of the observed responses was compiled as each of the tapes was viewed again. The log contained a section for each type of response and all the instances of that response from all the videotapes. For each response, the participant(s) and the stimulus were noted. After logging responses, a descriptive narrative of each session was written.

The narratives had four sections, including a brief summary of the session giving an overall sense of what occurred and a list of the responses for the sessions. The main section of the narrative described the particular instances of the responses in detail. Following the account of each session, conclusions were drawn. They were generalizations based on the specific responses to the content of instruction, the materials, and the instructional strategies in the session.

The most important issues emerged from this stage of data analysis. It became evident that learner responses clustered around four themes: (1) learning spelling rules or features of orthography, (2) phonological distinctions, i.e., hearing or producing phonemes, (3) vocabulary level, and (4) lesson design or learning strategies suggested in the materials.

After distilling the four major themes, the data narratives were again reviewed and events were coded, this time according to theme and type of response. This process made it possible to further examine the outcomes of the instructional sessions. All of the responses related to each theme were grouped together across the sessions to create thematic narratives leading to the analysis of the students' responses vis-à-vis the linguistic concepts and the instructional design.

Responses related to learning rules or features of orthography were of primary importance since the research was designed to test the premise that rule-based spelling instruction sequenced from basic to complex is a viable and useful approach for adult

students of English as a second language. Learner responses involving phonological and lexical competence were analyzed because of their prominence in the data.

The analysis of student responses vis-à-vis the lesson design and instructional strategies was of major interest since the other main goal of the research was to design and evaluate spelling materials. Therefore, any student responses that may have been related to the difficulty level of the content and the explanations were examined. Feedback on the activities provided in the lesson was studied to determine adequacy of number and type and appropriateness for the concepts presented.

Limitations

The length of the number of instructional sessions and the amount of material to cover were disproportionate: there was too much material and too little time. Effects of time constraints were especially evident in the later sessions; it takes time to lay the foundation for discussion of syllable structure and stress patterns. These points may have been beyond the range of learner readiness.

The lessons were lengthy, a necessary procedure for the research design. Pedagogically, shorter lessons dispersed over a longer period of time would be more appropriate.

The overall design of the study, i.e., focus on one sound contrast, has a built-in limitation. It precludes looking at other vowel sounds to reinforce the rules. Moreover, the long and short <i> contrast does not have a large number of variants; this may be a

limitation because the existence of variant spellings could be more meaningfully examined with more examples. On the other hand, the small set of variants made the study more manageable given the time constraints of the study, particularly in view of the first point above.

The need to film limited movement around the physical space. The absence of a camera operator necessitated limited movements in the room. Technological glitches affected availability and quality of data when the video camera did not function or the cassette ran out.

Since the students did not represent a homogeneous group, the cultural dimension of various learning styles may have had an effect on the number and type of responses. The personalities of individuals may have skewed the responses in favor of those for whom participation came more naturally.

Chapter IV

INSTRUCTIONAL CONTENT

Spelling rules for English are bound to be numerous and generalizations not without frequent exceptions. The goal of describing the system for pedagogical purposes is to separate regular spellings from those that appear less regularly and to delineate principles of regularity at all levels of the system. When regular representations are displayed, the exceptions can be seen more clearly and become more manageable. Accordingly, one of the precepts used in compiling an overview of English spelling is to highlight consistency and place boundaries around inconsistency within the system. To elucidate the complex nature of the English orthographic system, a description needs to include its principles, correspondences, and rules.

The principles stem to a large extent from the nature of the writing system and from the history of the language. English is largely an alphabetic system, so it is organized around the representation of sounds with letters. The large number of deviations from the pure alphabetic principle of one sound per letter causes the great controversies over English spelling. Irregular sound-letter correspondences, other than those accounted for by morphology, are attributable to foreign language borrowing and sound changes that did not

become incorporated into the orthographic system. Some of the inconsistencies stem from decisions made in order to standardize spelling at the time of the invention of the printing press.[2] Spelling irregularities have led to calls for spelling reform at various times throughout the history of the language from people who have found the diversity intolerable. For historians and enthusiasts of language curiosities, all of the variety in spelling is intriguing, albeit impractical.[3]

The correspondences are the observable patterns in graphemic representations of the phonemes. The major and minor correspondences basically refer to common, less common, and rare spellings, identified by frequency of occurrence. The correspondences may be consistent one sound to one letter relationships, as in the case of many consonants. On the other hand, the same sound may be represented by more than one letter and by a different combination depending on its position in the word, e.g., <ai> in <main>, or <ay> in <may>.

The rules include patterns and devices for representing the phonemic value of the vowels. One basic rule is <e> marking for long vowels, as in <kite> or <cane>. Another is consonant doubling in inflected forms to indicate short vowels, as in <hopped> vs. <hoped>. Rules are also common in lexical spellings seen in more advanced vocabulary.

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[2] Cummings (1988) contains details of etymological and historical factors in the English orthographic system.

[3] Arguments for and against spelling reform are common throughout the literature, e.g., Bloomfield (1933) and Sampson (1985). Arguments against reform received support from the Chomsky and Halle (1968) analysis of underlying forms and sound changes. Nevertheless, there continue to be calls for simplification and regularization, particularly of some of the more rare and exotic spellings. The American Literacy Council is one of the groups advocating such reforms.

For example, in <serene> and <serenity> pronunciation changes are not reflected in the spellings. This feature, once viewed as another instance of lack of regularity, is now recognized as systematic and predictable at the morphological level.

In analyzing the system, it becomes evident that it consists of a hierarchy of features, starting with basic phoneme-grapheme correspondences and proceeding toward the most complex features, which are those involving lexical spelling. A delineation of regularities according to the principles governing each level should guide spelling instruction. The following overview of English spelling is a teacher's guide to some of the important facts and features of the system. At the time that it was compiled, Carney (1994) had not yet appeared. This valuable reference contains a very detailed survey (although in his preface the author says that some aspects of English spelling have not been treated adequately in the 535 pages). The research behind this teacher's guide is mainly the Hanna study and Cummings (1988), both of which are quite technical. Carney's work is also technical, so the student of orthography needs a certain amount of initiation into this vast and complex field.

The contents of the remainder of this chapter are the outcome of one person's initiation into the research on and analyses of the English writing system. The basics have been extracted from the whole. Many of the thorniest issues could not be treated due to the enormousness of the endeavor. Among those issues include detailed descriptions of transformation rules for palatal consonants and their numerous graphemic representations. Since the focus of the instructional design for the dissertation was vowels, this and many of

the consonant spellings remain somewhat underdeveloped in the overview. Despite the sketchiness in places, the overview provides a point of departure, and sources are now available for any missing information.

Also missing, and perhaps not as readily available, is an adequate treatment of spelling of the indeterminate vowel, or the schwa sound, occurring in unstressed syllables. In fact, the entire matter of syllables raises difficult issues for analysis and pedagogy. The basic rules and correspondences apply best for single syllable words or stressed syllables of longer words. The syllable patterns presented in the overview are based on syllable divisions as they appear in dictionaries. These are basically conventional ways to divide printed words, when necessary, at the ends of lines. The problems involved in using these generalizations in teaching sound-based spelling to non-native speakers of English is discussed in the analysis of student responses further on in the dissertation.

The elements of English spelling determine the instructional content for the students. Once teachers begin to understand the system in general, they can begin to show it to the learners and devise strategies for coping with the issues.

An Overview of English Spelling

1. The Phonemes of English: Vowels

Short		Long	
(ă)	cap	(ā)	cape
(ĕ)	pet	(ē)	Pete
(ĭ)	kit	(ī)	kite
(ŏ)	hop	(ō)	hope
(ŭ)	cut	(yo͞o)	cute
(o͝o)	book	(o͞o)	boot

Other Vowel Sounds

(ô)	paw
(oi)	oil
(ou)	out

Vowel + (r)

(är)	cart
(âr)	care
(êr)	near
(îr)	fire
(ôr)	for
(ûr)	early

Schwa

(əl)	ta**ble**
(ən)	lis**ten**
(ər)	messeng**er**
(ə)	**a**lone

2. The Phonemes of English: Consonants

(b)	**b**us
(ch)	**ch**in
(d)	**d**ark
(f)	**f**unny
(g)	**g**et
(h)	**h**at
(j)	**j**ump
(k)	**k**eep
(l)	**l**ast
(m)	**m**ap
(n)	**n**ap
(ng)	ri**ng**
(p)	**p**aint
(r)	**r**ub
(s)	**s**ame
(sh)	**sh**ip
(t)	**t**ime
(th)	**th**in
(*th*)'	**th**ey
(v)	**v**ery
(w)	**w**ay
(y)	**y**es
(z)	**z**oo
(zh)	usual

3. Consonant Spellings: Correspondences

Consonant	Basic Spelling	Other Spellings (with position[5])		
		initial	medial	final
(b)	<b>			
(ch)	<ch>			<tch>
(d)	<d>			
(f)	<f>	<ph>		<ph>
				<gh>
(g)	<g>			
(h)	<h>			
(j)	<j>			<dge>
(k)	<k>			<ck>
(l)	<l>			
(m)	<m>			
(n)	<n>	<kn>		
(ng)	<ng> (medial & final)			
(p)	<p>			
(r)	<r>	<wr>		
(s)	<s>			
(sh)	<sh>			
(t)	<t>			
(*th*)	<th>			
(th)	<th>			
(v)	<v>			
(w)	<w>			
(y)	<y>			
(z)	<z>		<s>	
(zh)				

4. Consonant Spellings: Patterns

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[4] (*th*) = voiced consonant in <the>; (th) = voiceless consonant as in <thin>.

[5] Refers to position in stressed syllables.

(j)	<g> + <e>, <i>, or <y>: *gentle, gist, gyp*
(s)	<c> +<e>, <i>, or <y>: *cell, city, cycle*
(k) *crow*	<c> +<a>, <o>, <u>, <l> or <r>*cat, come, cut, clap,*
	<k> after a long vowel sound or as part of a postvocalic consonant cluster: *shake, like, ask, think*
	<ck> after a short vowel sound: *back, stick, clock*

(s)

Consonant Sound Combinations	Basic spelling
(kw)	<qu>
(ks)	<x>

Consonant clusters: Two or more consonant sounds in sequence; their sounds are blended, but each sound can still be heard. Each consonant sound in the cluster is represented by its corresponding letter.

Examples of consonant cluster spellings:

Initial

		<bl>				 		
		<cl>				<cr>		
						<dr>		
		<fl>				<fr>		
		<gl>				<gr>		
		<pl>				<pr>		
<sc>	<sk>	<sl>	<sm>	<sn>	<sp>		<st>	<sw>
<scr>					<spl>			<str>
					<spr>	<tr>		<tw>

Final

<nd>	<nk>	<lp>	<ct>
	<sk>	<mp>	<ft>
		<sp>	<lt>
			<pt>
			<st> *etc.*

Double Consonants: Final double consonants spell a single final sound (in a one-syllable word or a single medial sound in a two-syllable word)

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Double Consonants - Final		Double Consonants - Medial	
(b)	<-bb>	(b)	<-bb->
(d)	<-dd>	(d)	<-dd->
(f)	<-ff>	(f)	<-ff->
(g)	<-gg>	(g)	<-gg->
(l)	<-ll>	(l)	<-ll->
		(m)	<-mm->
(n)	<-nn>	(n)	<-nn->
		(p)	<-pp->
(r)	<-rr>	(r)	-<rr->
(s)	<-ss>	(s)	<-ss->
(t)	<-tt>	(t)	<-tt->
(z)	<-zz>	(z)	<-zz->

Consonant Digraphs: Two consonant letters used to represent a third sound; the individual sound of each consonant is not heard in a consonant digraph.

(ch) <ch>

(sh) <sh>

(th) <th>

(*th*) <th>

(hw) <wh>

5. Vowel Spellings: Long Vowels

Long Vowel Rules

Long vowels may be spelled with a single vowel letter or with two vowel letters written together.

The long vowel patterns:

(1) open pattern: a single vowel letter (V#[6]) or a consonant letter followed by single vowel letter (CV#) or vowel digraph (CVV#)

(2) marked (closed) patterns: a single vowel letter followed by a consonant and a silent <e> (VC<e>#) or a vowel digraph followed by a consonant, consonant cluster or consonant digraph (VVC#/VVCC#).

Long Vowel Spellings

	Basic Digraph Spellings:		Other Long Vowel Spellings
(ā)	<ai> (medial)	maid	<eigh> neighbor, eight, weigh
	<ay> (final)	may	
(ē)	<ea>	meat	<ie> thief, niece
	<ee>	meet	<eo> people
(ī)			<eigh> height
			<y> (final, one syllable word) my, by, fly
			<i**CC**> find, kind, child
			<igh> high, sigh, right
			<ie> (final, one syllable word) tie, lie, pie
(ō)	<oa>	float	<ough> dough, though
	<ow>	flow	<owe> owe
			<ew> sew
(o͞o)	<oo>	boot	<o**C**e> lo*s*e, move, prove
	<ue>	clue	<u> truth
	<ui>	suit	<ough>through
	<ou>	group	
	<ew>	grew	
(yo͞o)	<ew>	few	<iew> view
	<ue>	cue	
			<u> human

---

[6] V and C stand for vowel and consonant and refer to letters, not sounds. # indicates the end of a word or syllable.

6. Vowel Spelling: Short Vowels

Short Vowel Rules: Short vowels are spelled with <a>, <e>, <i>, <o>, <u> + consonant.

The short vowel pattern: a short vowel is usually spelled by a single vowel letter followed by a single consonant (VC#), a double consonant (usu. <ll>, <ss>, <ff>), a consonant cluster spelling, or a consonant digraph (VCC#).

Short Vowel Digraphs and Other Short Vowel Spellings

(ă)	<augh>	laugh
(ĕ)	<ai>	said
	<a>	any
	<ea>	breath, deaf
	<ie>	friend
(ĭ)	<ui>	build
	<ee>	been
(ŏ)	<a>	was (wŏz, wəz), want
(ŭ)	<ou>	tough, enough, couple
	<oe>	does
	<o>	front, done, from
	<oCe>	love, come, some

Spellings of Other Vowels

(ô)	<au> (usu+**C**)	cause, sauce, launch, haunt
	<aw>	jaw, squawk
	<a> before <l>	false, almost, wall, walk
	<ough> + <t>	bought, thought, fought, ought
	<augh> + <t>	taught, caught, daughter, naughty
	<o>	soft, cost
	<ou>	cough
(oi)	<oi> (medial)	moist, poise, joint
	<oy> (usu. final)	toy, boy, loyal, royal
(o͝o)	<oo>	look, cook, good
	<u + **C**>	push, put, full
	<ou>	could, would, should
(ou)	<ou> (medial)	pound, south, ounce, thousand
	<ow> (usu. final)	now, cow, how, howl, tower, scowl, clown

Vowel + (r)

(är)	<ar>	cart, snarl, chart, yarn, starch parse, scar
(âr)	<are>	fare, care
	<air>	fair, stair, chair
(êr)	<ier>	fierce, pierce
	<eer>	peer, cheer
	<ear>	rear, near, fear, clear
(îr)	<ire>	fire, tire, hire
(ôr)	<or>	sword, scorn, torch, forfeit
	<our>	court, mourn, pour
	<ar>	war, warm
(ûr)	<ear>	early, earth, earnest, rehearse, pearl
	<ur>	urge, curb, purse, turmoil, absurd
	<ir>	stir, skirt, whirl, birch, circumstance
	<er>	verse, permanent
	<or>	word, world

Schwa +(r)

(ər) final (ər) may be spelled <er>, <or>, <ar> in words of two or more syllables: *messenger, director, familiar*
final (ər) is less frequently spelled <re>: *acre*

Schwa + (l)

(əl) final /əl/ may be spelled <el>, <al>, or <le> in two syllable words: *model, total, middle*

Schwa + (n)

(ən) or (n) can be spelled <on> or <en>: *weapon, frighten*

8. Syllable Patterns

A syllable is a word part that has one vowel sound.

The VCCV Pattern: Words with the vowel-consonant-consonant-vowelpattern are divided into syllables between the two consonants: *traf-fic, ef-fort, sin-cere, op-tion* (Level 5, Unit 15, p. 96)[7]

The VCCCV Pattern: Words with the vowel-consonant-consonant-consonant-vowel pattern are usually divided before or after a consonant cluster or consonant digraph: *ex-plain, im-prove, con-stant, mis-chief* (-VC/CCV-), *part-ner, hand-some* (-VCC/CV-). (Level 5, Unit 16, p. 102)

The VV Pattern: Words with two vowels together are divided between the vowels. The first vowel is usually long: *po-em, cre-ate, radi-o, di-al.* (Level 5, Unit 17, p. 108)

The VCV Pattern: Words with a short vowel sound in the first syllable are usually divided into syllables after the consonant. The consonant is part of the short vowel pattern: *rap-id, cred-it, val-ue* (-VC/V-). Words that have vowel-consonant-vowelwith a long vowel sound in the first syllable are often divided before the consonant: *na-tion, e-qual, la-ser* (-V/CV-). (Level 5, Unit 19, p. 120)

8. Inflectional Spellings

Rules for spelling changes that result from adding <-ed>, <-ing>, <-er>, and <-est>:

For one-syllable words, if the vowel is short and spelled according to the short vowel pattern, double the final consonant before adding an ending that begins with a vowel.

For one-syllable words, if the vowel is long and is spelled according to the long vowel pattern, drop the final <e> before adding an ending that begins with a vowel. The vowel in the ending takes the place of the final <e> in the long vowel pattern.

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[7] All in-text citations are references to Henderson and Templeton (1994).

9. Lexical Spelling

Sound Changes in Word Form:

Consonant Changes: not sounded to sounded sign-sig**n**ature

Vowel Changes: long to short vowel sound h**ea**l-h**e**alth

long vowel sound to schwa **a**ble-**a**bility

short vowel sound to schwa form**a**lity-form**a**l

Rules for spelling words with sound changes:

The sound changes are typically not indicated in the spelling.

The sound alternation usually results from the adding of a suffix resulting in a word with a different number of syllables.

In some 3-syllable derived forms, the sound change is in the stressed syllable just before the suffix, e.g., *precise-precision.*

Sometimes there is consonant and vowel sound change, as in the previous example.

It is also possible for there to be consonant substitution along with long and short vowel variations: *collide-collision.*

The elements of English spelling outlined above determine the instructional content for the students. Once teachers begin to understand the system in general, they can begin to show it to the learners and devise strategies for coping with the issues. Elements of the orthography chosen for the lesson in this study are described in the next section.

Content for the Lessons

Given the vastness of the orthography, the study was designed around a limited number of typical lessons that would demonstrate to the student the major principles and rules using one contrasting sound. The lessons covered a narrow phonemic range, but went deeply into the layers of the orthographic system. The long and short sounds of <i> were used.[8] The following concepts were used to guide the materials development:

1. Spelling of (ĭ) in monosyllables illustrating the generalization for short vowel spellings: a short vowel is usually spelled by a single vowel letter followed by a single consonant (VC), a double consonant (usually <-ll>, <-ss>, <-ff>), a consonant cluster spelling, or a consonant digraph (VCC). Examples of (ĭ) in closed syllables are <win>, <will>, <whiff>, <wink>, <wish>.

2. Spellings of (ī) illustrating generalizations for long vowel spellings. A long vowel can be spelled in two ways:

   1) Closed Pattern: a single vowel letter + a consonant + a silent vowel letter, <e>:
      -VC<e>: <nice>, <tide>, <drive>
   2) Open Patterns
      a) a consonant + a single vowel letter: CV#: <my>
      b) a consonant + a vowel digraph: CVV#: <tie>

3. Variant Spellings of (ī) in monosyllables
   Examples: <high>, <height>, <kind>, <sign>

4. Homophones
   Examples: <by>/ <buy>, <die>/<dye>

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[8] Any long-short vowel contrast could have been selected, and there was no particular criterion for the selection of this one. For the purpose of this study, limitations based on the number of variants available for these sounds is noted in the Limitations section of this chapter.

5. Inflectional Spellings
   Consonant doubling to maintain (ĭ): <chip>, <chipped>
   <-e>-drop in (ī) spelling: <write>, <writing>

6. Long and Short <i> in polysyllabic words illustrating the generalization that the spelling patterns in stressed syllables of two-syllable words are the same as the patterns in single syllable words.

   Examples: (ī) (VC) <sincere>, <witness>, <ticket>
   (ī) (CV) <pilot>, <silent>, <license>

7. Long and Short <i>in lexical spelling illustrating the generalization that vowel sound changes are not reflected in spelling in related words. Examples:

(ī)	(ĭ)
divine	divinity
unite	unity
provide	provision
suffice	sufficient
sign	signature
malign	malignant

Description of Lessons

The eight lessons that are described below are the materials created to use in instructing students in the orthographic concepts. Each lesson corresponds to one of the concepts targeted for the study. The lessons were supplemented by activities and materials related to vowel discrimination. The supplementary practice activities were an outgrowth of student responses to the first lesson of the series. Descriptions of the supplemental materials are found after the descriptions of the eight lessons. All of the lessons, including lesson plans, can be found in Appendix B.

Lesson 1: Facts about English Pronunciation and Spelling

The goal was to provide a point of departure for a study of spelling. The introduction involved a brief presentation of the principal features of the system, including a definition of alphabetic spelling, followed by an illustration of ways in which the system does not follow the alphabetic principle. Examples of multiple graphemic options available for one sound were given: (k) = <c> or <k> as is <cat> and <kite>, and (ā) = <ay>, <ai> or <eigh> in <way>, <wait> and <weight>. Inflectional spelling issues were illustrated using <study> and <pretty> to show the replacement of <y> by <i> before adding a suffix beginning with a vowel, e.g., <studies>, <studied>, or <prettier>, <prettiest>. Finally, vowel sound alternations not accompanied by spelling changes were introduced: <study> (with its inflected forms) versus <student> and <studious>, <nature/natural>, <athlete/athletic> and <please/pleasant/pleasure>.

The lesson also included a review of English phonemes. By looking at phonetic symbols and pronouncing sounds represented by each symbol, the phonemic repertoire of English was established. Consonant and vowel sounds were compared to consonant and vowel letters. The imbalance in the sound to letter ratio was considered: 39 sounds (15 vowels and 24 consonants) to 26 letters 5 vowels and 21 consonants). The ways in which the writing system uses the alphabet to represent all the vowel sounds was the starting point for the study of English spelling.

Materials. Charts (see Appendix B) accompanied the presentation of the basic features of the orthographic system. The 26 letters of the alphabet were shown on one chart. On another, the vowel letters and consonant letters were shown separately. Consonant digraphs and the combination <qu>[9] were added to the list of consonant letters to account for all the basic spelling units.

The consonant phonemes were arranged so that they would parallel the alphabet rather than by phonological features. For spelling, an alphabetically ordered arrangement was used. Orthographically motivated dictionary symbols were used to represent the sounds and their most common graphemic representation. For the consonants, IPA phonetic symbols were provided as well where they differ substantially from the dictionary symbols, i.e., /t/, /dʒ/, /ĥ/, /ʃ/, /ʒ/, /ŧ/ and /ð/ were needed to identify the sound.

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[9] This combination was singled out to alert the learners to the fact that <q> normally is followed by <u>; the vowel is performing a special function in this combination.

The vowel phonemes were shown in three groups: long or name vowels, short vowels and other vowels. Both IPA phonetic symbols and dictionary symbols were given. The long and short system identifies the two sounds typically associated with each vowel letter; it thus highlights a pattern of alternation that is a prominent feature of the orthography.

Objectives. Through this lesson, students would have an increased awareness of systematicity of English spelling. They would begin to see the overall system and to focus on the phonological base. They would be able to differentiate the phonemes and understand the alphabet in relation to the phonemes. Students would summarize the sound-to-letter ratio, identify consonant digraphs and begin to consider the long and short vowel spelling rules.

Lesson 2: Short <i> in One-Syllable Words

The goal of this lesson was to provide information about one of the short vowels as it appears in one-syllable words. First of all, there was a list common vocabulary items, e.g., <big>, <win>, <thing>, known by the learners and used to establish the target vowel sound. The words all exemplified the short vowel spelling pattern VC(C). Function words, though typically occurring as unstressed spoken forms, were included to provide visual reinforcement of the pattern. All of the words in the Basic Word section were intended to supply evidence for the learner of the sound-spelling relationship central to the lesson.

The lesson had a pronunciation section describing the articulatory features for

proper pronunciation of the sound. Learners were to practice making the sound and then repeating short sentences composed of one-syllable words containing the short <i>. Since the lessons provided the sentences in written form, the students would read as they practiced the pronunciation.

The spelling rule was stated as follows: in one-syllable words, short <i> is spelled with the letter <i> + a consonant. It provides for the sound-letter correspondence for the vowel and the spelling pattern that indicates the vowel quality.

To practice the target concept of the lesson, a list of thirty words was given. The learner was instructed to examine the words, notice the spelling, and to pronounce each word. The words were grouped by similarity of meaning. The learner was instructed to make sure the meanings were clear before doing the practice exercises that followed. The exercises consisted of fill-in sentences using words from the list. The context provided in the sentence or in a short paragraph was supposed to trigger the appropriate lexical item.

The last practice exercise involved writing the words again in rhyming lists. In this case, the learner would use the words without respect to their meanings. The task required categorizing words by sound patterns. At the end of the exercise, there was a question aimed at reviewing the short vowel spelling pattern. Also, the learners were informed that words with other short vowels would be spelled using the same spelling pattern and asked to give some examples of such words.

Objectives. Students who used this lesson would be able to pronounce short <i> in one-syllable words used in lists and sentences. Students would also be able to spell

words containing the target sound and spelling pattern. As a concomitant benefit, they would become familiar with a number of new vocabulary items.

Lesson 3: Long <i> in One-Syllable Words

This lesson had a similar goal to the previous one, i.e., to cover a basic vowel sound and spelling. It was structured in a similar fashion as well. It began with sample words to establish the sound of the long <i>. The Basic Word section was followed an explanation of the pronunciation of the sound. Attention was drawn to the fact that long <i>, a "name" sound, sounds like the pronoun <I> and the word <eye>. It was important to give learners a way to keep this sound distinct from long <e> or /iy/, the sound associated with <i> in other languages. Pronunciation practice producing the sound and repeating sentences consisting of single-syllable long <i> words was suggested. The sentences provided were short and intended to be an easy way to reinforce the sound and the visual image of words exemplifying the target concept.

The long vowel spelling rule was given next. An attempt was made to present the rule simply but clearly and completely. The rule was stated as follows: in one-syllable words, the long <i> is spelled with the letter <i> + a single consonant + the letter <e>. The letter <e> is part of the spelling pattern and does not represent a pronounced sound.

The lesson contained two written exercises. For the first one, a list of 13 words was provided. All the words were one-syllable words with long <i>, words such as <glide>, <pride>, <strive>. Definitions of the words were provided: each definition was followed by "What is (a) _____?" Learners had to pick the appropriate word

from the list and write it on the line. For unknown words, they were instructed to use a dictionary to find the meanings.

The second exercise was a written transformation. Given a list of words with short <i>, e.g., <fill>, <dim>, <spin>, students needed to apply the rules to produce the long <i> words, i.e., <file>, <dime>, <spine>. Some of the examples required making other adjustments to the spelling besides adding the <e>. For example, double final consonants <-ll> and <-ck> became single in the long vowel spellings. Students had to control the basic spelling rule treated in the lesson and the other spelling issues that were involved, as well as the meanings of unfamiliar words.[10]

At the end of the practice exercises, as in the previous lesson, an attempt was made to provide questions for review of concepts presented in the lesson and to prompt the learners to try to survey their own knowledge of vocabulary to produce other similar pairs of words. The learners were also asked if they knew words with other long vowels spelled according to the same pattern.

Objectives. Students who used this lesson would be able to (1) pronounce long <i> in isolation, in word lists, and in words in sentences, (2) spell one-syllable words with the target vowel sound, (3) recognize the short vowel spelling <i> = (ĭ) + C and the contrasting long vowel spelling <i> = (ī) + C+ <e>, and (4) produce orally and in writing corresponding words with the contrasting long vowel.

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[10] Words with <wh> and <w> were grouped together in the lesson.

Lesson 4: Long <i> in One-Syllable Words--More Long I Spellings

The aim of the lesson was to treat variant spellings of long <i> as an example of this salient feature of English orthography. Information and spelling rules were presented. The target sound has four graphemic options with limited distribution throughout the system. They were displayed in lists for the students to examine and discuss. The keyword <kite> was used to identify the (ī) sound in words where (ī) is not spelled according to the basic long vowel rule. All of the words in which <-igh> is used were listed first. In addition, <height> (a lone variant of the variant) was included. The second list had words with the target sound in the final position spelled with <y>. These words have the following pattern: CCV, where the two consonants represent a digraph or a consonant cluster. The use of <-ie> or <-ye> following single consonant (sounds and spellings) were also included. Finally, homophones, <die>/<dye>, <by>/<bye>/<buy>, and <right>/<write> were highlighted. Students were prompted to explore the words in the lesson, identify any that had the same sounds, different meanings, and different spellings, and write the words. Students were also asked if they knew any other homophones.

Written practice exercises involved producing the appropriate word as an antonym, e.g., *laugh-cry; wet-dry, low-high.* Also, there was a cloze type sentence exercise in which the student had to fill in a target word by the meaning of the sentence. These exercises were followed by the presentation of another variant spelling: (ī) spelled <iCC> as in <child>, <find>, <pint>. To practice writing words with these spellings,

students were instructed to read some phrases, identify the (ī) words, and write the words.

Finally, the lesson had a section that pointed out exceptions. It showed that the words <live> and <give> have short vowel pronunciations but long vowel spellings. Furthermore, the words /lív/ and /layv/ are both spelled <live> and /wínd/ and /waynd/ are both spelled <wind>.

Objectives. After examining variant spellings of (ī), students would be able to spell words with long <i> spelled as <-igh>; pronounce all the words given in the lesson; and know the spellings of certain homophones.

Lesson 5: Consonant Doubling

In this lesson, the goal was to show how previously studied spelling concepts function in affixation. The lesson dealt with the fact that spelling patterns for long and short vowels govern consonant doubling. Consonant doubling occurs as a marker of a short vowel before an affix beginning with a vowel. Non-doubling results in VCV-, where the second vowel is the initial vowel of the affix; it functions as the <e> does in the long vowel spelling pattern VC<e>, thus explaining the deleting of the final <e> before the affix is added.

To give students the opportunity to work with these features of the orthography, the lesson presented students with the rule followed by exercises. First, single-syllable verbs with VC# spellings were given. Students needed to add <ed> and <ing> after doubling the final consonant of the base. In the second group, they added <er> and <est>

to adjectives. Finally, there were cases in which nouns could be formed by adding <er> to the base, as in <win/winner>. The identical process was repeated for words with long <i>.

The arrangement of practice exercises by word class provided reinforcement of the grammatical function of the inflectional spelling under consideration. The vocabulary used in the exercises consisted of words that had been used already, so that the meanings and the correct pronunciation were known and could be reviewed. As in the previous lesson, the lists were intended to provide for visual memorization and to give students a chance to repeat a number of examples sequentially orally and in writing, and also for the purpose of encouraging memorization.

Objectives. Students who used the lesson would recognize the long vowel pattern (VCV) when adding <-ed>, <-ing>, <-er> and <-est>. They would also see the need for consonant doubling to mark the preceding short vowel sound. Students would be able to spell words correctly with both long and short vowels with the affixes.

Lesson 6: Spelling Polysyllabic Words by Syllable Patterns

The goal of this lesson was to continue applying spelling patterns evident in one-syllable words to polysyllabic words. This is the beginning of the advanced lessons. The idea was to analyze the sounds and spellings of disyllabic words and to recognize VC-CV in words with short <i> in the first syllable and V-CV in words with long <i>.

For short <i> in two-syllable words, words with two different medial consonants as well as one doubled consonant were examined. The lesson also showed some apparent

exceptions, e.g., <middle> looks as if it has an extra consonant. Also, words such as <limit> and <visit> seem to need another consonant, which they do not have.

For long <i> in two-syllable words, the words used as examples highlighted the concept that long vowels occur in open syllables: V-CV or V-V. It also provided other instances of long <i> spellings in the final syllables of two-syllable words, such as <polite> and <divine>.

Objectives. The lesson consisted of the statements of the rules and the examples. There were no exercises. The rule sheet enabled the students to examine spelling patterns, compare the sounds of the spoken words to the spelling patterns and to discuss the issues encountered in the exploration of the more advanced problems of the sound-spelling relationship.

Lesson 7: Syllable Stress and Spelling

The aim of the lesson was to give the learner an opportunity to explore sound-spelling relationships in stressed and unstressed syllables in polysyllabic words. In words with a short or long <i> in one of the syllables, previously learned spelling patterns could be applied. The sounds and spellings of unstressed vowels needed to be examined and understood so that strategies for identifying the appropriate letter could be devised by the speller.

At the beginning of the lesson, there was a list of words for the students to use to analyze syllables and vowel sounds in stressed and unstressed syllables, including <different>, <dignity>, and <victory>, among others. The next section contained

explanatory information regarding unreduced and reduced vowels. The explanation covered two-syllable words and words of more than two syllables, where main and secondary stress were at issue. The sound of a full vowel in a stressed syllable could be identified as the same as a vowel sound in a one-syllable word, whereas the weak vowel sound was schwa.

The written exercise involved writing the listed words, identifying the stressed syllable and the reduced vowel, and comparing the sounds to the letters. The lesson encouraged the learners to consider the use of "spelling pronunciations." To recall the spellings of reduced vowels, it is helpful to keep in mind a pronunciation that reflects the full vowel spelling.

To complete the lesson, there was a section on the sound of short (ĭ) in unstressed syllables, in particular where final /ɪʤ/ or /ɪt/ are spelled <age> and <ate>. Examples of common words with this feature were given.

Objectives. Students who used this lesson would grow in their awareness of stressed and unstressed syllables, full and reduced vowels. They would increase their understanding of sound-letter relationships in polysyllabic words.

Lesson 8: The Sound-Spelling Relationship in Word Forms

The goal of this lesson was to treat the concept of vowel alternation in pairs of word forms. Beginning with the pairs <wise-wisdom>, <child-children> and <wild-wilderness>, the spelling and pronunciations were compared. In the first pair, the

spellings follow the rules for long and short vowels, i.e., (C)VC<e>, and (C)CVCC. In the case of the other two examples, <i>CC can be considered a special spelling of long <i> in <child> and <mild> and a regular spelling of short <i> in the complex forms.

In the second set of examples, words like <crime> and <criminal>, <mine> and <mineral> are further indications of the prevalence of pairs of words with long and short vowel sounds in stressed syllables. These words also illustrate the rule for vowel shortening in derivational spelling. The long <i> in the single-syllable word becomes a short <i> in the stressed syllable of the related word with the ending. Furthermore, there is no spelling change to indicate the short vowel.

The lesson also shows other examples of pairs of words with a long vowel sound in a base word and a short vowel sound in a related word with a suffix and a different number of syllables, including the following: <precise - precision>, <divide - division>, and <describe - description>. The position of the stressed syllable as well as the vowel and consonant sound changes are notable. Also, the spelling does not reflect the vowel-sound changes.

Rules and sentence completion exercises accompanied the words illustrating the target concepts. Students had to identify the required word from the context. Then they could practice writing the word correctly. By working with the words and the contexts, the student would be able to reinforce the meanings as well as the use of the appropriate grammatical form while working with the spelling and the pronunciations.

Objectives. After using this lesson, students would be able to pronounce and spell

words with short and long <i> in stressed syllables. Students would also become familiar with sound patterns resulting from adding the suffixes <-al> and <-ion> and the spelling issues associated with these changes. In addition, students would have an increased understanding of grammatical forms of words and of the meanings of the words used in the exercises.

Supplemental Activities and Materials

Vowel Sound Identification

A review exercise to practice vowel sound identification was created. The students were given the opportunity to practice with an array of words exemplifying various sound contrasts. Students were to listen to dictated words, identify the targeted vowel sound, and write the words they heard in appropriate spaces on the answer sheet provided. In dictating the words, short sentences were used to provide contextual assistance. For the first part, columns on the answer sheet were labeled "Short Vowel Words" and "Long Vowel Words." Words were read in pairs, e.g., *rat/rate*, and *not/note*. There were two paired examples for each vowel sound. The short and long pairs were dictated alternately, starting with short <a>. The completed answer sheet would have two columns with the following words: *rat, hat, not, rob, hug, cub* and *rate, hate, note, robe, huge, cube*. The students could then read the columns and compare the sound and spelling contrasts.

The second part of the dictation involved distinguishing first between words with

short vowels and then words with long. They listened to ten words and wrote them underneath the symbol for the sound they identified. The words were dictated in random order, e.g., *pack, fog, wet, pick, luck, cash* and *fine, nose, cake, these, rule.*

Vowel Contrasts: Different Sounds/Same Spelling

The study sheet provided two lists of words showing the <oo> spelling used for /uw/ and /ʊ/ . The words were arranged in rhyming groups, e.g., *roof, proof, goof,* and *book, cook, hook.* The goal was to provide an adequate number of examples so that the students could recognize the contrasting sounds as well as practice producing the sounds while looking at the words.

Short Vowel Discrimination

The objective was to provide practice identifying spoken words distinguished by short vowel contrasts. Three sounds were targeted: /æ/, /a/, /ɔ/. The answer sheet had a column for each of the sounds, and the words were written in the columns. As the students listened to the words, they had to circle the word that they heard. For example, the spoken word was *luck*, and the choices were *lack, lock*, and *luck*. Further practice was provided by a dictation of words that the students had to write in three lists according to the vowel sound that they identified.

The Short Vowel Spelling Pattern

The objective was to review the C(C)VC(C) spelling pattern for all short vowel sounds in one-syllable words. The worksheet stated: "Many words containing short

vowels are spelled with a single vowel followed by one or more consonants." The pattern was displayed by words in lists so that students could see the initial, medial and final spellings clearly. Below was space for the students to write words with short vowel spellings following the short vowel pattern. They were to write words for each vowel sound.

English Vowel Letters and Sounds: Long and Short Vowels

The purpose was to demonstrate the fact that each vowel letter is associated with two vowel sounds. The letters were displayed across the line; underneath each letter was the phonetic symbol representing the contrasting sounds. There were five sentences, each containing words with only one of the long vowels. The sentences were meant to provide visual reinforcement for long vowel spellings, particularly the fact that the sound is associated with the name of the letter used to spell it. There were also notes and questions to prompt students in exploring long vowel spellings.

Chapter V

ANALYSIS OF STUDENT RESPONSES

This chapter focuses on insights gained from observing the learners' interaction with materials and concepts. A portrait of the group gives a general idea of the characteristics of these learners. Portraits of particular learners chosen for the study are presented so that each individual's responses are more understandable. Particular learners have their styles of responding; the group responses were also typical of a diverse group of students of English as a second language. All of the names have been changed, but the nationalities of the participants are reflected in the pseudonyms.

Group Portrait

The members of the spelling group were seven students from seven different countries. They came from western, central and eastern Europe, the Middle East, and southern and eastern Asia. Except for the absence of a representative of the Latino population, this group was typical of the multicultural demographics of this part of New Jersey.

These young men and women, whether immigrants or travelers, were a diverse

group of students with a bond: a linguistic puzzle to solve so that they could function well in an English-literate society. English has become the international language; the United States seemed to be their place of destiny. Their participation in this spelling study was one of their many actions motivated by the urge to prevail in a personally challenging situation.

As a group, these students were industrious and ambitious. They were well-educated and intent on self-improvement through continuing their studies despite obstacles encountered along the way. Not the least of these obstacles was the English language. Their stories encompass the modern international student experience: the search for a place in the global community--a technologically sophisticated world.

Individual Portraits

Danuta

Danuta was a 21-year old Polish woman and the youngest member of the spelling group. She was very quiet and shy. She smiled and nodded a lot during the spelling classes. She spoke very softly but rapidly once she started. She had a lively sense of humor. Danuta was an intelligent and serious student, bright and eager to learn. Of all the students in the group, Danuta was probably the most literate. Her Polish education had provided her extensive training in literature and writing.

The oldest of three children, she was living at home with her parents and her siblings. Her sister was a senior in high school and her brother a sophomore. Danuta graduated from high school in Poland and had been accepted at the University of Krakow

before coming to the United States in 1993 on vacation. At that time, she planned to go back to Poland to live on her own and attend the university.

However, she decided it would be too difficult to be separated from her family, which had just been reunited in New Jersey after years of separation. Five years earlier, her father had moved here without the rest of the family. He had left his job as a veterinarian and come to live with his mother, who was an American citizen. He worked as a custodian and a factory worker. Danuta had some difficulty accepting her father's decisions to leave his family, profession and country. She had the most trouble when she was younger and had to live without him.

In spite of her difficulties, Danuta had adjusted to her life in the U.S. She said that all the changes in her life, particularly learning a new language, made her feel like a new person, someone reborn. Instead of realizing her dream of attending the University of Krakow, she was 25, spending a semester learning English and planning to go on to study general education courses at the college.

Danuta had attended a gymnasium, i.e., a college preparatory high school in Poland, modeled after the German educational system. The curriculum included literature from ancient Greek poetry to modern novels. She was used to reading two to three books a week and completing long academic writing assignments (four- to five-page essays) in Polish. She said that her teachers were definitely "looking for quantity." Also, while they were interested in the content of the students' compositions, there was a strong emphasis on correct spelling. Danuta indicated that she had problems with

spelling her native language. When essay tests were given, dictionaries were not permitted and therefore her grades were always lower because of her poor spelling.

Danuta always enjoyed reading and writing in high school, but she was always more interested in science. At the time of her participation in this study, she was an advanced ESL student. She was troubled by her lack of proficiency in written English. She seemed to have little difficulty in speaking, although she spoke very softly. She seemed to understand both spoken and written English. After completing classes in ESL, she took chemistry, calculus, and English composition. She seemed to be very happy with her studies and to be doing very well.

She was working at two part-time jobs in fast-food restaurants. She and her siblings tended to speak English at home, especially in front of their mother, who was not having as easy a time with the language as they were. Danuta had made friends with some of her American classmates. Between her jobs, her family and social life, she said she was not studying enough. She intended to transfer to a 4-year institution, where she planned be more serious. She thought that her affinity for lab work would eventually lead her to be a chemistry major.

Danuta indicated that since coming to the United States, she had read only one book in Polish. When she wrote letters in Polish, she sometimes found herself confusing English and Polish spellings, much to her surprise.

Gauri

Gauri was a 25-year old Indian woman whose native language was Gujarati. She

was a beautiful, bright-eyed, pleasant person. In the group, she was quiet and shy, but she was an extremely hard-working student. Although she was not a poor speller, she was an ambitious learner. She would commit herself to any and all opportunities for supplemental instruction and apply herself diligently. She had been a regular in the English Language Resource Center, taking advantage of the resources and the camaraderie of the learning center.

Gauri had been in the United States for 2-1/2 years, having finished her university studies in banking and accounting before getting married and joining her husband in this country. She was living with her husband's family: his mother, father and two younger sisters. His father was a store owner and he was a computer technician. One of his sisters was attending Rutgers University and living in a dorm. Gauri had two sisters, one married and living in this country. The other was still living in India, but she was planning a trip to the United States.

Gauri had little work experience in India. She had tried unsuccessfully to find entry-level employment in her field of interest. She had worked in non-paid positions as a data entry clerk and in a Certified Public Accounting firm. She had also worked in a bank as part of an internship for her university diploma.

While studying at the university and working in India, Gauri always wrote in English. She studied her native language from elementary school through high school. After that, in her daily life outside the home, the common language for speaking and writing was English.

Although she wrote a good deal in English, she had difficulties in English writing in her American studies. She encountered substantial differences in rhetorical modes and logic between American English and the English she knew in India. She was also faced with the need to expand her limited vocabulary. She had worked more with numbers than with words in her field of interest, accounting.

Since she had been living in the United States, she regularly read Hindu religious books in her native language as well as books of traditional home remedies. She was corresponding in Gujarati with friends and relatives in India.

In her 2-1/2 years in the United States, she had had four jobs. She had worked as a secretary, receptionist and sales clerk. Her goal was to take the Certified Public Accountant exam and find a job in an accounting firm. She had come to the college because she needed 13 credits before she would be qualified to sit for the exam. When she came to the college, she was dismayed to learn that she would need to take two semesters of ESL before she could begin the credit courses she needed in business law and liberal arts. Later, she found the ESL program and the community college resources very useful.

João

João was a 34-year-old Portuguese man, a former student of mine. He gave the impression of being an independent, solitary person, but was quite friendly. He always sought extra help from professors. He was looking for opportunities to use English and to learn. He wanted to express himself and to take advantage of any opportunities that

came his way. As a learner, he was slow but persistent. He knew his own style and did whatever it took to learn.

He had been living in the United States for 10 years. When he first arrived, he and his wife were tourists, but then decided to stay. After working at a construction job for a year or two, João bought a truck. He was able to make a comfortable living using his truck for hauling and delivering. After two accidents, however, he quit driving. He also got divorced and decided to go back to school.

João was living with a Brazilian couple whom he had known for about four years. His relationships with them provided him the support of a family. He was attending college in the fall and spring semesters, taking off in the summers to work at construction.

When João left school in Portugal, he was 18 years old and almost finished college. He had studied electricity and then accounting. As a young married man, he had hoped to obtain a position in management, but no opportunity presented itself. Instead, he worked in a French automobile factory as a machine operator making fuel pumps. He had to read instructions in French and write short notes for the engineer in Portuguese each day.

João did not like to write, yet he could handle the writing tasks on his job. He had written the usual assignments throughout his schooling; otherwise he did no writing. His current dream was to enter the field of medicine. He had been studying ESL at the college for two and a half years as the first step toward his goal. He was not concerned

about how long it would take to become a doctor. He believed that time would go by quickly and it was worthwhile to strive for the security that an education would bring. A job can be lost; an education cannot.

Having started the American Language Program at the entry level, João was having trouble meeting the exit criteria. He was required to repeat the American Language III reading and writing courses. He attributed his weakness in English to the fact that he used only his native language outside of his studies. He knew that he needed to practice in order to improve and felt that by the end of his undergraduate studies he would be proficient in English. He was planning to enter a pre-medical program after completing his course of studies at Bergen.

Kyung Hee

Kyung Hee was a 38-year-old Korean woman. Although she had been living in the United States for 10 years, she had a great deal of trouble with spoken English. She was afraid to speak; however, she appeared to have considerable passive knowledge of English, especially vocabulary. She was a quiet, mature person, who despite her nervousness managed to participate in the spelling group. She and Aviva, another member of the group, were classmates, so they worked together very well.

A university graduate, Kyung Hee had majored in art and education. Before coming to the United States, she had taught art in middle school. She was a member of an immigrant family of eight siblings. The oldest sister came to the United States first to work as a nurse in a hospital in Philadelphia. She had sponsored other siblings to come

and study or work. All but three were in the US.. Eventually, her parents also immigrated as well. Kyung Hee's brothers and sisters have been successful here. One brother earned a Ph.D. in computer science, and a sister studied art and now has a jewelry business of her own. Kyung Hee's husband owns an electronics retail business in Manhattan.

As a student in Korea, Kyung Hee enjoyed writing in her native language. In middle and high school, she achieved high marks on compositions. She kept a journal throughout her school years up to the university, when journal writing was no longer an assigned activity. Since she was an art major, she did not have a great deal of writing in her courses at the university, although she wrote some essays in the education courses she took.

When Kyung Hee first came to the U.S., she wrote letters to her friends in Korea but did not continue corresponding regularly. However, she continued to read a Korean newspaper every day. At one time, she was employed in the U.S. by a Korean-American newspaper; her job was headline writing (in Korean). She said that she used to know her native language very well but felt that she was losing her command of it. She sensed at times that she could not communicate well either in Korean or English. She was distressed by her inability to overcome her nervousness and to increase her competency, particularly in spoken English. She was even considering returning to Korea because she was not able to speak English well enough to enjoy a comfortable life here.

Kyung Hee was the mother of two children, a daughter in kindergarten and a son

in the second grade. Both children were bilingual. Kyung Hee and her family were living in a Korean community in Fort Lee, New Jersey. They attended a Korean Christian church, shopped at Korean grocery stores, and had many Korean friends and neighbors. Kyung Hee had had few opportunities to meet native speakers of English, and when she did, she had difficulty making herself understood. She had always been disappointed and frustrated in these encounters.

She made a decision to study English at the college instead of returning to Korea. Her younger brother and sister encouraged her to go to school so she could learn more English and improve her life here. Her husband was very supportive and happy about her decision.

Sing Tak

Sing Tak was a 23-year-old Chinese man. He was a quiet participant who did not attend all of the sessions. He did not explain his absences, but after missing two sessions in the middle, he returned and completed the series. Like Kyung Hee, he also had difficulties in spoken English. He spoke softly and was difficult to understand. He seemed shy, a little preoccupied, but was a pleasant, gentle person.

Sing Tak was not inclined to offer personal information. He never said anything about his parents and only briefly referred to a brother. He finished high school in China, but was not admitted to the university. He worked in a department store selling clothing before coming to the United States from Canton, China in 1993.

Sing Tak described himself as a successful student. He claimed to be a writer, but

his writing was not "beautiful" like his brother's. Apparently, Sing Tak was not known for his handwriting skills, but he had had no trouble fulfilling composition writing assignments. Later, during the time he was employed, he wrote a diary for himself regarding his work in the store. His job did not entail any particular writing tasks.

In the United States, Sing Tak continued to read newspapers in Chinese and to live in a limited English-speaking environment. He was living with an uncle and aunt; they all worked in a Chinese restaurant. Sing Tak was a cashier, so he answered customer's questions and translated their orders into Chinese for the cooks. When he spoke to the customers, he used "restaurant English," speaking to them about food and sometimes the weather. He said that he had no time to watch television or listen to news, so he lacked general knowledge for small talk with customers.

Sing Tak began to study after three years of restaurant work made him realize the need to continue his education in order to pursue an interest in computer science.

The portraits of the last two students, Aviva and Natasha, have less detailed biographical data. These two women were not available for interviews. Aviva had to return to Israel. Natasha had many commitments other than her studies; she did not spend much time at the college. In fact, she did not attend all of the sessions of the spelling series.

Aviva

Aviva, a 32-year old Israeli woman, was the most outgoing of all the participants in the study. She was often helpful to others and to me. She was a very cooperative and

willing learner. Her approach to learning was characterized by curiosity and independence; she engaged in problem solving vis-à-vis learning. It was her search to alleviate her frustration regarding English spelling that led her to join the group to begin with.

Aviva was tall, personable, and very stylish. She had been living in the United States for one year with her husband, who was a working professional, and her 5-year-old daughter. One of her reasons for wanting to learn spelling was so that she could help her daughter, who was learning to read English phonically. Aviva and her husband socialized with an international peer group among other professionals who understood and spoke English. She had an interest in improving her writing and reading skills. She already was quite proficient as a speaker, although as a native speaker of Hebrew she had some uncertainty about her English pronunciation.

Aviva did not plan to stay in the U.S. She intended to go back to Israel, where her husband's next career step was waiting. She herself was a certified public accountant and she intended to resume her professional activities at some later date.

Natasha

Natasha, a 30-year-old Russian woman, was a very quiet participant. In general, her comments were relevant, but few. She did not attend all of the sessions. Some of her responses suggest that attempting to study spelling may have reinforced her belief that it was an almost futile endeavor.

Natasha had been in the U.S. for 1-1/2 years. She had completed the American

Language program and was taking college courses. She had been a university student in Russia for 4 years; however, she did not graduate.

Throughout the series of lessons, Aviva, João and Gauri participated the most, at least they were more apt to respond orally with comments and questions. Aviva would look intently at the teacher while listening. Gauri would nod and make soft responses. She would sometimes giggle after she spoke. Danuta always seemed attentive, and though she was often silent, she would often smile and nod. She would participate orally, but very quietly. Natasha was also very quiet, as were Sing Tak and Kyung Hee. Their quietness and shyness contrasted markedly with the active participation of some of the others. There was a certain passivity that could have been the normal attitude of uneasy learners facing difficult material. The same students participated actively in written activities.

Analysis of Responses

The members of the spelling study group represent the kinds of students for whom the materials were designed. Their age, educational level and background, and their academic and professional aspirations were taken into consideration. The design of the lessons and the learning strategies were tailored to learners who would appreciate a direct approach with clear explanations of a complex instructional domain. In the words of one student, "You explained the rules and gave us exercises to test our understanding and to practice." A survey of responses by members of the group throughout the study provides

insight into the effectiveness of rule-based learning of English spelling. It is also possible to use learner responses to evaluate the design of the lessons.

The narrative that follows depicts the experience of the study with respect to the major themes of the analysis. It is written in four parts: (1) Rule-based Learning, (2) Phonological Issues, (3) Vocabulary Issues, and (4) Lesson Design.

Rule-based Learning, the analytical narratives, includes references to the features of orthography and to students' reactions when working with them. Phonological Issues recounts moments when phonological competency affected the teaching and learning of spelling. Again, the relevant linguistic concepts are indicated as student performance is analyzed. Vocabulary Issues examines problems the learners encountered with respect to the lexical items used in the lessons.

Although these three themes are used to analyze the student responses to the linguistic content of instruction, it is also true that these issues overlap. Spelling rules are generalizations that describe patterns of sound-letter relationships, so that the ability to apply rules or to understand them often coincides with the ability to hear and pronounce accurately. Vocabulary problems often result from phonological uncertainty. In reporting the data, an effort has been made to group together items that occurred together and to place them in the most appropriate section, according to whether they involved primarily orthographic, phonological, or lexical points.

Lesson Design shows student reactions to the instructional materials designed for the study of spelling. It explores effectiveness for the learners of the learning strategies

and activities. Each session of the study was planned to provide adequate instruction and practice in the concept(s) targeted in the lesson. The analysis focuses primarily on the difficulty level of the lessons, the quantity of concepts and activities, and the usefulness of the approach to learning English spelling.

Rule-based Learning

The search for rules to serve as guiding forces in language learning seems like an obvious endeavor for adult learners, especially those who would volunteer for a research study in spelling. They look for a framework for learning a complex linguistic system. The lessons were intended to give learners the opportunity to explore the orthographic system, beginning with elementary spelling. They could begin to learn how spelling works as a system and to see that they could apply concepts to learn more. If the basic rules were easily apprehended, rules governing the more advanced orthographic features could be explored.

The students in the group appeared to approach the study of spelling like typical college students in a course they had chosen to take. They all appeared ready from the outset to study a subject that they perceived the need to learn. During the introduction to the first lesson, "Facts about English Spelling and Pronunciation," the learners were able to listen, take notes, or examine charts given to them to illustrate various points.

As they listened to the presentation of the outline of English spelling principles, the students' comments and responses indicated engagement with the topic. They seemed to show familiarity with the concepts. It seemed as if everyone was at least

somewhat aware of the features of the system: the alphabetic principle, multiple graphemic options available for one sound, inflectional spellings and vowel alternations in derived forms. The students had experience (from grammar classes) adding endings for grammatical purposes and were familiar with the spelling issues involved. Several of the learners knew pairs of words, such as <nature/natural> and <please/pleasant>.

The goal of the introductory lesson was the orientation of learners within the orthography so that they could focus on a particular sound contrast and on its manifestation at the various levels of the system as the research study progressed. During the participant selection interviews, the students indicated that they had never studied spelling in any formal way. Their intellectual approach toward language learning made it seem appropriate to present technical aspects of the instructional domain. These included a survey of the phonemic repertoire of the English language along with a consideration of the English alphabet and the imbalance in the sound-to-letter-ratio; the learners seemed to grasp the importance of exploring this information. In fact, the overview lesson sought to establish a strategy for learning spelling to be used throughout the instructional sessions; that is, the learners would be encouraged to observe and explore English orthography.

The students seemed to be at ease when we considered the first basic spelling concept: use the same letter to represent long and short vowel sounds, and use contrasting patterns to distinguish the sound being spelled. By the end of the first session, the group could correctly verbalize the distinguishing spelling feature in <hop/hope> in unison: the final <e> marks the long vowel. And again, in unison, they correctly recognized and

verbalized the differing pronunciations of <d-i-m> and <d-i-m-e>. In these examples, used to test the students' understanding of the target spelling concept, they could hear the sound contrasts. They had grasped the notion that where there were two sounds there were two spellings.

In the second session, the learners had no trouble applying the rules and controlling their written production according to the rules. A dictation was given to practice vowel sound discrimination and the spelling of one-syllable words with short and long vowels. It included the words *not, note, hug, huge,* and *pact, fog, luck, cake, nose,* among others. Although it was difficult for the learners to produce the appropriate vowel letter for the short vowel sounds, they did not have trouble with the spelling patterns. When they wrote, they remembered not to use an <e> at the end of short vowel words, but that they needed to use one at the end of long vowel words. In response to my question, the students also indicated that they had written all the words with single vowel letters (in the medial position).

By the third session, these students were anticipating the concepts of multiple graphemic options and homonyms. The learners were able to discuss the difference between the long vowel spelling pattern VC<e> and the digraph <ee> and <oo> (used in the sample sentences illustrating long vowel sounds and spellings: *Tulips bloom in June* and *We see these trees*). Aviva was particularly interested in these spellings. She asked whether <sea> and <see> are pronounced identically. Gauri seemed to know the answer. She said, "I see the sea." They were starting to display an awareness of the orthography

and a readiness to engage in the process of learning it.

The students raised questions that showed their sensitivity to anomalies in the orthography and also indicated their very limited knowledge of the system. Natasha, Kyung Hee and Aviva had questions about the <w> spellings in <will/while >and <whip/wipe> in an exercise requiring transformation of words with short <i> to words with long <i>. They were able to produce the spellings <*wile> and <*whipe>. We explored the options in pronunciation and spelling: /w/ or /hw/ = <w> or <wh>. They also had a problem with the final consonant spellings for /k/ in <lick/like>. Kyung Hee wrote <*licke> instead of <like>. We discussed the problem in terms of the long vowel rule, VC<e>, and in terms of the short vowel rule. Aviva asked whether there was a difference in the pronunciation of <ck> and <k>. We were focusing on vowel sounds and spelling, but they had questions about consonants.

In the fourth session, we left the regular spelling patterns and started to consider variant spellings for (ī). The goal was to tackle the existence of multiple graphemic options, their frequency and distribution. Again, the students demonstrated an awareness and also a great deal of interest; however, they seemed more interested in the phenomenon itself rather than the idea that such spellings are less frequent and sometimes limited to a small number of words. We discussed the words <fight>, <might>, <night> as examples of words with the sound pattern (C+īt) and the archaic spelling <C+ight>. We compared <right> and <rite> as spellings of the same word. Everyone knew that spelling <rite> in the name of the supermarket "ShopRite" is commercial. I asked the

students why they thought the spelling had been changed. Acknowledging the lack of correspondence between the spoken and written forms, Aviva immediately responded: "to be readable." I mentioned that <nite> and <brite> are also simplified spellings sometimes used for commercial purposes. We discussed the title of the television show "Nick at Nite" as well as the use <brite> in names of products such as "Ultra Brite." Students' familiarity with these items illustrated their experience with the language from living in the United States and their ability to draw on it in the learning process.

In another discussion of the same issue two weeks later, Aviva had a question pertaining to simplified spellings of (CĪt) words: "I have a good question. Why don't we change it?" [the spelling <-ight> to <-ite>]. I indicated that the English language has no official way to incorporate spelling changes. Danuta asked: "Who invented the short form for commercial? Maybe they could change the others." Aviva responded: "Yeah, right..." We discussed spelling changes as part of marketing and the difficulties of incorporating the changes into formal language. Aviva commented that there was no academic group to make changes.

To help the learners cope with the non-simplified spelling, I tried to make the point that the number of (īt) words spelled <-ight> is limited to the eight on the list. João expressed some doubt that the list was actually complete: "Didn't we miss one?" When I asked him which word he wanted to add, he quickly withdrew his question. Later in a written exercise, he was the one student who persistently misspelled <*hight>, even after the group spent some time examining the spelling of (īt) in the word <height>. He

seemed to be overgeneralizing and failing to take into account an additional variant spelling.

At that time, he, Gauri, and Danuta had repeated <height>. Danuta and Gauri nodded when they heard the similar sound pattern and saw the different spelling. Gauri repeated <night/height>. Danuta asked the inevitable question: "Why <e> in <height>?" I indicated that the answer to her question may lie in the history of the language and said that etymologists do research in the development of unusual spellings. I suggested that we as a class might do some research, a suggestion that provoked prolonged laughter from the members of the group. They may have been interested in improving their spelling through a systematic study, but apparently they were not ready to become historians.

To establish yet another possible realization of long <i>, the use of <y> to spell (ī) in final position, the students worked with a list of words such as <cry, sky, fly>. Aviva, always the quickest to respond, was able to confirm her understanding of the spelling concept when she completed my restatement of the rule: "/ī/ at the end of a short word is often spelled _____?" She quickly filled in <y>. She seemed to be comfortable with the presentation of a spelling rule followed by a group of illustrative words.

The section on homophones was a typical instance of the students' facing explanations of features of the orthography. Even though the vowel sound under investigation has only a small number of words that are pronounced the same but that differ in meaning and sometimes in spelling, the students participated with obvious

interest in this part of the lesson.

The group considered the words: <by>, <buy>, and <bye> (as in <goodbye>). They were all familiar with <by> and <buy>. Gauri asked "What about <bye>?" waving her hand to indicate her reference to the word <goodbye>. When I offered that they might be wondering why three identically sounded words are spelled differently, Danuta nodded. I explained that different spellings are useful to readers, who can more efficiently identify distinct meanings. I also mentioned that only function words have fewer than three letters in English, an observation that is often referred to as the "small word rule." Danuta nodded and quickly made a note. The explanation was meant to help the learners grasp the spelling of words like <tie>, <pie>, and <die>. Aviva asked whether <*ty> would actually spell the same sounding word as <tie>. She was testing her understanding of the spelling concepts.

We also explored the notion that homophones carry distinctive meanings that are recognized by speakers from context. João asked for reassurance that the difference in spelling is a difference for the reader. He then continued inquiring about sound-letter correspondences and the effect of adding and dropping the final <e>: "If I take the <e> off <die>, is [it the sound] (dē)?" [Does <*di> spell (dē)?]. Another question, from Kyung Hee, was whether <pie> and <pi> represented the same sounds. Her question precipitated a discussion of technical vocabulary and spellings, a notion that seemed to stimulate a great deal of interest. The students knew the mathematical term, and it was not entirely surprising that they would introduce it into the discussion. To further

illustrate the point, I introduced the technical term <sac>. The students used their dictionaries and compared the meanings of <sac> and <sack>. The intellectual level and sophistication of the students was often evident in their approach to learning.

In dealing with variant (ī) spellings, it was also necessary to look at the fact that the long vowel pronunciation may be represented by a short vowel spelling pattern, as in the words <child>, <mild> and <wild>. This is an observation that is of importance to linguists attempting to formulate the generalizations for the spelling patterns. It appears to be an instance of patterned irregularity and is pertinent in connection with issues of vowel alternations in the orthographic system (viz., *child/children; wild/wilderness*; but *mild/mildness*). Beginning second language learners routinely have a problem with the pronunciation of the non-inflected forms, <child> and <wild>. These particular students were already familiar with these words, so they knew their pronunciation and spelling. Subsequently, in the lesson on derived spellings, when these words were again used to support the prevalence of long/short vowel contrasts in the English language, the students had difficulty retrieving this particular generalization. They did not consider <-ild> a valid variant spelling for long <i>; one student said she thought of it as an exception. They had the same problem with <ind>, another example of VCC where the vowel is not short.

When we looked at (-īnd) words, such as <mind>, <kind>, <find>, and <wind>, Danuta and João had the most trouble with <wind>. Other students seemed to know that the spelling represents two pronunciations, (wīnd) and (wĭnd), and two meanings. For

Danuta, the sample sentences given with the words helped clarify the matter. João, on the other hand, shook his head and insisted that one spelling can only have one pronunciation, and in this case it was (wĭnd). He was clearly having trouble with the fact that in English sometimes words with identical spellings can have various pronunciations and meanings. Previously, he gave two spellings (<green> and <grin>) one pronunciation. Here he needed to give one spelling differing sounds! In both instances, he struggled with the problems until he reached some degree of understanding.

The lesson on graphemic options took students into the realm of anomalies: archaic spellings, positional variants, homophones, and homographs. The complexities of spelling evident in the lesson on alternative spellings of long <i> did not seem to overly tax the learners. On the contrary, these issues seemed to stimulate them. There was often lively discussion and contributions by various students.

The lesson on consonant doubling and <e> deletion in inflectional spelling returned the learners to the issue of contrasting vowel phonemes and one of the major orthographic tactics for representing them. The lesson afforded the students an opportunity to practice adding endings to one-syllable words with long and short <i> and to consider consonant doubling in the light of their strengthened knowledge of contrasting vowel sounds.

This lesson generated a great deal of excitement and enthusiasm among the learners in the study group. They listened and followed along as I read the rule. It was unclear whether they actually paid attention to what the rule said since they very quickly

began to write the <-ed> and <-ing> forms of the words on the worksheet.

In the first part, the students had to double the final consonant in words such as <trim>, <grin>, and <dip>. While they were doing this part of the exercise, I noticed that Natasha and Aviva were not consistently doubling the consonant. Aviva said: "You need to double it everywhere!?" We reviewed the rationale for consonant doubling, i.e., to avoid VCV, the long vowel pattern, when adding endings that begin with a vowel. At this point she saw it and said: "AH! OK!" And then João pronounced <*biger> (which he had written). He said (bīgər); Aviva also produced the mispronunciation, and he said "OH!" and they nodded at each other.

After I explained the second part of the rule, which justifies consonant doubling to retain a short vowel spelling and explains non-doubling for a long vowel spelling, the students returned to their papers to correct their initial spellings, which included words such as <wipe>, <fine>, and <dine>. We worked on the forms of <dine> using a white board; Kyung Hee pronounced the base verb. I demonstrated the transformation of <dine> into the noun <diner> and contrasted it with <dinner>. João repeated the two nouns, with a quizzical expression. At last, to emphasize the contrast, I used the sentence: "You eat dinner at a diner." Everyone laughed and nodded. Sing Tak said, "Ah, now I understand the rule." They had grasped the concept: Use one consonant between two vowels if the first vowel is long; use two consonants if the first vowel is short.

We also explored the spoken forms <write>, <writing>, and <written> to review

the main points of the lesson. I asked the students whether the <-ing> form was spelled with a double <t>. Again, João answered incorrectly and everyone else corrected him. Aviva told him that the vowel-consonant-vowel pattern was needed for <writing>. She and others also understood that consonant doubling was necessary for <written> because of the short (ĭ).

The lesson on inflectional spelling was somewhat of a culminating point in the spelling series, apparently providing missing rationale for a spelling rule the students had previous learned and tried to apply. In studying grammar, they learn to double consonants and drop <e> before adding <-ed>, <-ing>, <-er>, <-est>; however, for the most part, they learn letter patterns without adequate reference to the sound patterns. Here, the students found that their study of long and short vowel spelling patterns enabled them to grasp this sound-spelling relationship in a new way. Several students mentioned that they never really understood why they doubled consonants. The students seemed satisfied that they had discovered a missing piece to a puzzle. Aviva said, "I thought that it opened my eyes." Danuta commented, "Every teacher should give these rules."

If the rules for inflectional spelling clarified some points for the learners, the lessons involving complex issues regarding syllabification may have been less enlightening. The students approached the more advanced lessons with the same earnest diligence with which they had approached the elementary (even though the semester was wearing on and the study was taking longer than I had originally intended). Several additional factors (beyond possible learner fatigue) may have accounted for the

confusion: (1) unclear presentation of rules; (2) difficulty of the concepts; and (3) newness of the approach and the endeavor.

There is no doubt that adult intermediate students need to move swiftly from single syllable to multisyllabic words. A grounding in the phonemic base of the language along with knowledge of the basic spelling patterns for long and short vowels should serve as the platform for further study. The first step in the study of syllabic spelling was to make sure that the students had a clear understanding of the makeup of the English syllable. They seemed to know that a syllable is a part of a word that contains a vowel and maybe one or more consonants and to be ready to explore the next level of the orthography.

The problem that is of utmost importance is to differentiate between written and spoken words when working with syllables, especially if rules are to be based on syllable boundaries. The other very important element, if spoken words are the point of departure for spelling instruction, is the effect of word stress on the pronunciation of vowels in unstressed syllables. These two rather complex factors make rule-based learning relative to spoken forms very difficult, and some of the difficulties are evident in the responses of the students in this study.

In an attempt to tackle spelling principles for two-syllable words, the learners were instructed to listen to a list of words, focusing on the vowel sounds, and to write the words by the sounds they heard. Each word had short <i> in the first syllable, which was stressed. Once they had written the words, we looked together at the spellings, trying to

apply rules or discover patterns that they had learned when studying one-syllable words. Students recognized the short vowel pattern in the initial syllable of words like <sis-ter>, <win-ter> and <in-sect>. Aviva, Sing Tak, and João followed the explanation and indicated that they could see the patterns CVC-CVC in the spellings of the two-syllable words. Natasha and Gauri appeared to be taking notes.

Another set of words exemplified the rationale for doubled consonants at syllable boundaries. Short vowels are normally found in stressed syllables that end with a consonant. When the word is written, the consonant is doubled to reflect the vowel quality. Examples of such words are *kitten, scissors*, and *ribbon*. The consonant doubling serves the same purpose as it does when used in inflectional spelling. The students in the study saw the similarity.

When I asked the group why a double consonant was needed in the spelling of (glĭtər) and (slīpər), we established that without the two consonants, we would have <*gliter> and <*sliper>. Danuta, Aviva, and Kyung Hee were able to pronounce these misspellings with the long vowel, and they were able to contrast the correct and incorrect spellings and pronunciations.

The group members faced and questioned some challenging issues in looking at words presented as examples of short <i> spellings in two-syllable words. For example, why do words spelled <C+le> such as <little> and <middle> have a double consonant? What explains the absence of double consonant in <double> and <triple>, in contrast to <scribble> and <apple>?

When exploring the spellings of long <i> in two-syllable words such as <pilot>, <silent> and <tiny>, some of the students quickly reacted to the problem of syllable division. João asked: "The first syllable ends with a vowel?" and Gauri inquired, "Where is the end of the syllable?" They had raised a question about the rule "Long vowels generally occur in syllables that end in vowels." Rather than presenting the rule in terms of syllable boundaries, it would have been more helpful to draw attention to the VCV sequence, which would have been consistent with the long vowel spelling pattern previously studied. In that case, the speller would be alerted to the absence of consonant doubling, as in inflectional spelling.

Long vowels occurring in the final syllable of two-syllable words presented less of a problem. Most of the students appeared to recognize that the final <e> on words such as <inside>, <polite> and <awhile> indicates that the preceding <i> represents the long vowel. Gauri, João, and Aviva could produce the correct pronunciation of <*polit>. Aviva pointed out that it was the pronunciation found in the second syllable of <political>.

Syllable stress and spelling presented multiple problems for the learner. The rules on stress patterns given in the lesson were apparently completely new for the learners. In some cases, they were unfamiliar with the term "schwa." The session devoted to the topic was mostly taken up with addressing the students' uncertainty over identifying the stressed syllable. In words such as <different>, <victory>, and <license>, the short or long <i> in the initial stressed syllable presented no particular problem, or at least there

were no questions addressing the full stressed vowel. The fact that the non-stressed vowel is reduced to schwa did not seem to influence their ability to spell these words. These students indicated that they were naturally memorizing the "spelling pronunciation," i.e., pronunciations that reflect full vowel spellings. Aviva, Danuta, and João rehearsed the word <victory> repeatedly with the full vowel in the second syllable and seemed to be unaware that there was any other way to pronounce it. The students were surprised to learn the word has a reduced vowel. In fact, the need to learn vowel reduction and stress patterns might be more pertinent to accent correction. Students need to be taught to reduce.

In the final lesson on derivational spelling, the learners worked mostly with the pronunciation of the derived word in each pair. They practiced making the shifts in stress and vowel quality as they read the words, e.g., <precise/precision>, <collide/collision>, <decide/decision>. The rules describing the changes may have helped; the students were very active in identifying stressed syllables and comparing the base form with the derived form as to the position of stress and the vowel sounds in stressed syllables.

Finally, I asked the students whether they had ever tried to use sound/letter correspondences in any aspect of their spelling. There was little response. Sing Tak was the one student who answered this question. He said that the only way he had ever tried to spell was by memorizing words one by one. Although it seemed that no one had ever attempted a systematic study of English spelling based on the sound-letter correspondences or any other phonological and morphological aspects of the system, the responses of

learners showed their willingness to increase their awareness of orthographic features through exploration and discussion. When asked about the impact of learning about spelling for them, students specifically mentioned rules. Kyung Hee replied, "I read more easily and understand [the] meaning. I like to learn spelling rules." Aviva said, "The rules we learned here help me…to be more aware of the spelling much more so it's really helped; I feel very good about it."

This section has dealt with student response to rule-based learning. Starting with basic long and short spelling patterns, the instructional plan proceeded toward the more complex issue of spelling syllables. In the next section, the students' problems with English phonology as they influenced spelling are explored

Phonological Issues

Spelling is the formation of written words from letters according to accepted usage. In an alphabetic writing system, the process requires knowledge of the phonological system of the language, since the system represents the spoken words, with the letters corresponding to the sounds. An incomplete grasp of the phonemes would confuse the speller. The analysis that follows shows some instances of students grappling with such problems. With confusion on the basic levels, it was not surprising that students would have a partial and shaky command of the even more demanding phonological issues surrounding word stress and vowel reduction.

Within the context of a broad overview of English orthography given at the beginning of the series, one point had overwhelming salience: phonological

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discrimination and oral production of vowel phonemes constituted a major challenge to the participants. After sitting quietly through the introductory lecture, there was a clearly discernible increase in activity around the exploration of the vowel sounds as the learners began to participate orally by repeating sounds and words and by asking questions.

With their attention concentrated on a vowel chart showing long, short, and 'other' vowel sounds, the learners listened as I began to recite long vowel sounds. Then the group spontaneously joined in. They recited the long vowels /ey/, /iy/, /ay/, /ow/ correctly but expressed some confusion about /uw/ and /yuw/. They grew silent as I continued with the short and 'other' vowels. When I finished, there was general expression of surprise, with smiles and murmurs, concerning the large number of vowel sounds needed in English. This was the beginning of a sequence of interactions in which the learners confronted their weaknesses.

In the long vowel group, most of the students had trouble with long <u>, which was shown in the charts using the keywords <boot> and <cute>. Long vowels are supposed to be "name sounds," so that long <u> would be /yuw/. Unfortunately, the orthographically-motivated transcription symbol for long <u> is (yo͞o), reflecting the most common graphemic representation for /uw/, e.g., <boot>, <soon>, and <tooth>. Therefore, I introduced /uw/ and /yuw/ as the two sounds of long <u> and <oo> and <uCe> as the two spellings.

We discussed and practiced the /uw/ and /yuw/ contrasts, and the students practiced pronouncing the words <boot> and <cute>. However, this was not to be the

last of the students' questions concerning high back vowels. At another time, Natasha raised a different question: "What is the difference between [the pronunciation of] <boot> and <book>?" She had pronounced /buwt/ and /buwk/. Danuta agreed by nodding that this was a good question. Natasha smiled after trying several times to pronounce the two words, but continued to pronounce both with the same vowel sound.

In the following session of the study, Danuta again asked about the vowel contrast /uw/-/ʊ/, also expressing concern with two keywords on the vowel charts, <boot> and <book>. She had a problem associating contrasting vowel sounds with the same vowel spelling, and she asked the following question: "What is the difference between <book> and the long vowel of <u>?" She also wanted to pronounce /buwk/. This is one of the instances where the problem of phonological discrimination related to sound contrasts that are outside of the long-short pairings.

All the students worked together to address the question. I encouraged them to think of rhyming words patterned after each of the words, starting with <book>. Together, they were able to produce <book, look, took, cook>. Gauri offered <brook> (a word the others did not know) and I added <shook>. When the students practiced repeating the rhyming words, they seemed to be pronouncing the vowel sound correctly.

After working with the first target sound, the students had trouble making another list of /uw/ = <oo> words to practice the contrast. The keyword <boot> did not evoke rhyming words; the students did not think of words like <shoot> or <root>. They finally considered <pool>, <tool>, and <school> as examples of <oo> spellings of /uw/. Then

Aviva and João, revealing further confusion, asked whether <brook> or <boot> had the long <o> pronunciation, i.e., <brook/broke, boot/boat>. The double <o> was drawing them toward long <o>.

The students struggled with two problems. The one confronted by Natasha and Danuta reflected their incomplete knowledge of English phonemes. Once the written forms of words are seen, it is only logical for learners to assume one pronunciation instead of two for the identical grapheme. The fact that Danuta and Natasha chose the sound that they could pronounce rather than the less common English /ú/ is predictable. Aviva and João had a different problem. Nevertheless, theirs also shows the effect of reading on pronunciation: to them the <oo> signaled /ow/. They were unaware of basic spelling units, in this case digraphs, and how letters are used to represent sound in English spelling.

This vowel contrast continued to perplex some of the students. Even when they knew that <oo> represented two sounds, Aviva and Natasha seemed to struggle with a sentence having common words containing both of them: "The food is good in this restaurant." They recognized the contrasting sounds; however, their difficulty in imitating the modeled sentence was evident. Since their tendency was to produce /uw/ in both <food> and <good>, they could not pronounce the whole sentence. They clearly needed work on the vowel sound in <good>.

When we came to short vowel sounds, everyone quickly encountered many problems. After pronouncing /æ/ and /[redacted]/, they all became silent. One student, Sing Tak,

shook his head and smiled, looking down at his papers. Aviva asked: "What is the difference between /a/ and /æ/?" She was referring to <hot> and <hat>, which she clearly had trouble pronouncing distinctively. Later, she asked again for clarification of this contrast, and Danuta commented: "It's almost the same sound." Finally, after much repetition of sounds and words, the students admitted that they were having a good deal of trouble hearing and pronouncing the vowels. It became evident that the short vowels presented more difficulty than any others did.

From the first session of the study, there was unmistakable evidence that the learners were not aware of the full range of vowel phonemes in English. Difficulties both in hearing and pronouncing abounded. Again, predictably, the problems did not show up when it was a question of long/short paired vowel contrasts.[11] They were fairly clear and comprehensible to the learners. As noted earlier, mastery of the basic spelling patterns (CVC and VC<e>) is not hampered by inability to discriminate corresponding long and short vowel sounds. The problem is the confusion with less obvious distinctions.

I was very concerned about the students' weak phonological competence. I was convinced that it would be difficult and perhaps even counterproductive for them to approach principles of orthography from simple to complex given that the phonemic base is the *raison d'être* for the whole system. Therefore, I spent some additional time in this session and the next on activities to practice distinguishing vowel sound contrasts even

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[11] The long-short vowel sound distinctions are accounted for by the historical changes occurring in what is known as the "Great Vowel Shift."

though the whole broad phonemic range was not strictly speaking necessary for my research study. These activities provided additional evidence of the extent of the students' burdens in this area.

These activities were dictations in which the students needed to practice sound discrimination and letter matching. In one of them, the students had to correctly identify the vowel in the words as long or short and then write them in a list accordingly. The words were dictated in pairs to make the contrast more evident. For example, the pairs <rat/rate>, <not/note>, <hug/huge> were given. After that, the students had to listen to 20 one-syllable words, 10 with short and 10 with long vowels. The task was to identify which vowel sound was in each word and write words on the answer sheet showing the vowel sound that was identified. Students participated intently in these exercises, making a concentrated effort to listen and write carefully.

In going over the answers, various students offered correct spellings of words with short vowel sound. First, Danuta volunteered <h-a-t>. Next, João and Aviva spelled <n-o-t> together. Then there was a lively chorus of responses as the students checked their answers and practiced their spelling.

For the long vowel words, the group read the words from the dictation aloud: <rate>, <hate>, <note>, <robe>… Then, even though they had the correct spelling, Sing Tak and João mispronounced <huge>, saying instead, <hug>. Aviva emphatically pronounced <huge> correctly. Seeing and hearing the distinction, João was surprised and corrected himself. Everyone pronounced the sounds correctly as they read the list the

second time. Aviva and João practiced repeating <huge> and <cube>. She agreed with him when he suggested that <cute> was another example of the long <u> sound in a one-syllable word. "<Cute>, oh yes, that's right," she said.

As I was about to go on to the next part of the activity, João asked a question about <robe>, which seemed to remind everyone else that they too had questions about this word. Natasha, Sing Tak and Kyung Hee all asked for clarification of the pronunciation. Sing Tak seemed to be confusing the final consonant. He was not sure whether to write <robe> or <rope>. Kyung Hee needed to hear the contrasting vowel sounds in <rob> and <robe>. Aviva could pronounce the words correctly, but seemed perplexed anyway. João still seemed surprised to hear and see the two sounds associated with <o>.

During the second part of the dictation, when the students were read one-syllable words containing various short vowels which they had to identify and write correctly, the learners again appeared to concentrate intently. For example, Aviva repeated each of the target words as she attempted to distinguish vowel sounds. There were more difficulties with short vowels, particularly (ă), (ŏ), and (ŭ). For instance, one of the target words was <luck>, which it seems they all confused with <lock>. As I was establishing the meaning of <lock>, Gauri and others brought up the spelling <l-a-c-k> and wanted to know how to pronounce it. Aviva then asked me to pronounce all three of the words: <lack>, <lock>, and <luck>. The group tried to produce the three-way contrast, encountering much difficulty. The students appeared to know three meanings but had very little idea which

meaning was associated with each spelling. They were not completely aware that there were three distinctive pronunciations.

Finally, I dictated 10 long vowel words so that the students could identify and write them in groups. The long vowel words afforded less difficulty, although one student, Aviva, considered <*cack> as the spelling for <cake>. She also had trouble with <these>. When she heard it, she was not sure whether to write <this> or <these>. For another student, Danuta, the long vowels were not a big problem. She stated, "The short vowels are more difficult than the long."

After another listening /dictation test of vowel discrimination the following week, the students seemed drained. As I was collecting the papers, the students were very quiet. Their solemn facial expressions suggested to me possible discouragement, so I asked them if the exercise was very hard. Natasha rolled her eyes and shook her head; Danuta also shook her head affirmatively; Kyung Hee smiled and Aviva said, "Yes, it was." Only Gauri had no trouble hearing the words and writing them all correctly.

While auditory discrimination and spelling of short vowel phonemes was problematic, the learners did not have the same difficulties when dealing with long vowels, and pairing long and short vowel phonemes seemed to aid the identification of the distinctive sounds. In working with (ī) and (ĭ), the challenge was not auditory discrimination; it was pronunciation. There was a strong tendency to substitute (ē) for (ĭ), so that when Gauri pronounced <fill>, it sounded like <feel>. She tried many times to correct herself, as she was apparently able to hear her error. Most of the other students

had a similar struggle and practiced pronouncing base words and sentences provided in the lesson to assist them.

Although they were not entirely successful in correcting their pronunciation, they were not hindered by it from controlling the long and short <i> sound contrast and spelling patterns. Working with the contrast in a written transformation exercise showed the learners' lack of concern with the pronunciation of (ī) while they were focused on a spelling task requiring them to manipulate the contrasting sounds. João and Gauri could spell <win/wine> correctly even if they pronounced <win> as if it were (wēn). The problem for João became evident when he read <grin> as (grēn), which he knew was the color. Other group members correctly pronounced (grīn); Aviva mentioned that the color was spelled with <ee>. He had to learn that in this case there were two spellings, two pronunciations and two meanings. Gauri showed her confusion when she asked whether <whip> is the word that means cry (<weep>).

In two-syllable words, identifying the target sound (short <i>) in the stressed initial syllable presented no particular difficulty, as has been noted in the case of the words <winter> and <sister>. In the words <mistake> and <sincere>, where the stress falls on the final syllable, the students also had no trouble with <mis-> and <sin->. They were able to identify the long vowel sounds and spellings, particularly in <mistake>. However, Aviva and João missed the VC<e> pattern in <sincere>. They did not put in final <e>; apparently they did not identify the vowel as long or recognize the need for a long vowel spelling. They probably noticed that long vowels are pronounced differently

before <r>.

When we used the words <kitten> and <ribbon> in a dictation to test for double consonants in the spelling of two-syllable words with short vowel in the first syllable, Natasha and Aviva appeared to focus on the spelling of the vowel in the second syllable. They recognized that a similar sound /ə/ is spelled in two different ways. I mentioned that the letter for the spelling of reduced vowels is not possible to predict. As she had done at other times, Natasha looked at Aviva, smiled and shook her head and said something. Both students laughed.

As previously mentioned, the lesson on syllable stress and spelling revealed the learners' lack of understanding of issues surrounding vowel reduction. We spent a lot of the time on the pronunciation of the reduced vowels. They often did not hear the reductions, and they did not reduce when they pronounced the words. The words used in the lesson, e.g., <dignity>, <principle>, <criticize>, were not optimal for demonstrating this phonological feature in that the reduced vowel can either sound like short <i> or schwa. Nevertheless, as indicated in the discussion of the pronunciation of <victory>, the students simple did not reduce when saying this word. Also, their non-reduced pronunciation is one of their spelling strategies.

When we discussed the concept of "spelling pronunciations," used by some people to remember spellings of reduced vowels, Aviva offered her version of <business>, indicating she was familiar with the process of pronouncing all the letters in a way that aids spelling but distorts pronunciation. She and Danuta said that they knew it

was not a good idea to use spelling pronunciations when they spoke.

Spelling pronunciations were also explored using words ending in <-age> and <-ege>, where the unstressed vowel is reduced to (ĭ). The students recognized the difference between the sound and the letter used to represent it. They recognized that in <climate>, the spelling could represent (ā) in the final syllable and be pronounced (*klīmāt). Danuta and João were particularly involved in these issues. She responded to the variant spelling <-ege> in <college>, wondering why it was not spelled with <-age> like <image>.

By the final session of the series, the learners appeared completely at ease with vowel sound alternations such as the ones in <wise/wisdom> and <wild/wilderness>. João was even able to point out that the pair <mild/mildness> does not exhibit the same vowel contrast. They practiced as a group, pronouncing other pairs of word forms with long and short vowels: <crime/criminal>, <mine/mineral>, <type/typical>....

Before discussing the rules for pronouncing derived forms, I asked the students to say the words <precise> and <precision>. Sing Tak pronounced the second syllable with the identical (ī). As we developed the rule together by looking at the stress pattern, the students were very interested in the placement of stress and the correct pronunciation of the words. The meanings also became a focus of learner concern.

Indeed, issues of phonological as well as lexical competence were never absent from the effort to explore spelling. All three areas presented a challenge, which the learners seemed eager to embrace.

Vocabulary Issues

Vocabulary problems fell into two general categories: (1) unknown words and (2) words confused with similar sounding words. Both of them presented a significant dilemma. Adequate reinforcement of spelling patterns required a sufficiently large number of words. Illustrating basic spelling patterns in one-syllable words would entail encountering the limitations of the learners' vocabularies. The handicap would only grow more evident as the students continued to explore all the levels of the orthographic system.

The first sessions of the series, as has been noted, were dominated by activities treating vowel sound contrasts. When these phonological distinctions receded as an issue, i.e., when lessons focused on only one sound contrast or on only one sound, a low level of lexical competence was often apparent.

Questions arose about meanings of words as learners explored lists of sample words for long and short <i>. For example, in the first session, Aviva wanted to know, "What is <itch>?"and she asked about the difference between <itch> and <each>. Kyung Hee asked, "<Lime> is a kind of tree?" a question that provoked discussion of trees, fruits, and colors. On the other hand, Kyung Hee unexpectedly offered <ooze> as an example of a word with the long <u> sound. It was surprising that she knew the word, but she was the student who had been living in the United States the longest, and her passive knowledge may have been much greater than her ability to express herself.

When students looked at the words provided for the written fill-in exercise in the

second lesson, it was clear that the vocabulary was more of a problem than the spelling, since the spelling pattern for short vowels had been easily established. For instance, words such as <squint>, <slick>, and<fling> were unknown to the learners. They had trouble with words like <slip> and <skid>, so much a part of everyday life in the middle of the winter in a densely populated region where cars routinely skid off road and people slip on icy walks.

The group effort to do the exercise was an instance of collaborative learning to complete a difficult task. Those who knew meanings offered them to the others; those who had electronic dictionaries used them and contributed the information. This pattern of interaction among the members of the group, the instructor, who was called on to provide explanations, and material resources was repeated many times throughout the rest of the sessions, especially when there was uncertainty regarding vocabulary.

In one of the exercises (in the supplementary activity The Short Vowel Spelling Pattern), the learners were asked to test their capacity for short vowel discrimination in written production. Again, it was evident that the limitations of their vocabulary would have an impact on their progress in spelling. Each of them was able to write a few words with each of the short vowels using the short vowel spelling pattern. Some of the words were notable. For instance, Kyung Hee could only think of <Gump> as a rhyming word for <pump>. (When she tried to write <lump>, she wrote <rump>.) She did not have words like <clump>, <stump> or even <bump>. At the very end of the session, Natasha asked a question about a word she had spelled in this section: <*plamp>; it seemed that

she was trying for <plump>.

During the word pair exercise in lesson three, there was lively interaction between students, especially when the transformation resulted in an unfamiliar word, as in <grim/grime>, <slim/slime>, and <twin/twine>. When they first encountered <slime>, they said that they thought it was related to the word for <slide>, the playground apparatus. They discussed among themselves other likely meanings, and Gauri used an electronic speller to contribute the actual meaning. There were smiles and laughter as they discovered new meanings.

In the fill-in exercise for Lesson 3, the students had trouble with unfamiliar vocabulary even though the activity included the definitions of the words. For instance, the statement "This is strong cord or string" was followed by "What is _____?" However, they were very involved in working on the exercise, exploring the meanings and filling in the blanks. Students, like Natasha for one, who are otherwise sophisticated and advanced, did not know common words like <strive>, <thrive>, and <vice>. Not only are these words that exemplify the sound spelling contrast under investigation, but also they are words of general use for college students.

In the fourth session, when we looked at words spelled with <-igh>, <high>, <sigh> and <thigh>, Aviva had a question: "What is the <thigh>?" It was not clear whether she was asking about <thigh> or <sigh> because of her pronunciation. There was interaction among the students to arrive at an answer for her. Kyung Hee assisted Aviva in clarifying her question, trying to get her to specify which of the two words she

meant. We finally determined that she did not know the meaning of either word. Gauri, João, and, Kyung Hee participated in defining the two words, while Aviva used the electronic dictionary.

The word <pry> also elicited a question from Aviva regarding its meaning. She suggested that maybe it was related to <pride> and <proud>. When informed that it was not, she commented, "Well, I tried." João assumed that the word was (prā), so he thought he knew the meaning. Again the group participated in discovering the meaning through discussion and through using the electronic dictionaries.

During the lesson on inflectional spelling students discussed issues resulting from adding suffixes to base words and again there were question on the meanings of the words. For instance, we noted the fact that <dimmer> is both an adjective and a noun. Gauri commented that she had learned from her sister-in-law that a switch used to dim lights was a dimmer, but that she had never known how to write the word.

Sing Tak asked about the meaning of <scribble>, a word that was used to illustrate consonant doubling in two-syllable words. Aviva told him it meant, "mixing". After learning the meaning of <scribble>, she asked "So how do you write "scribble" as in "scribble eggs"? She did not know that English has the two words <scribble> and <scramble>. She could not pronounce either of them, and she did not hear a vowel contrast. The initial consonant cluster (skr-) and the (-ămb-) posed the major obstacles. Other students had less difficulty pronouncing <scramble>; however, no one was able to identify a letter to go with the short <a>.

The confusion surrounding these two words was reminiscent of the problem discussed earlier with respect to <lack>, <lock>, and <luck>. In that case, three meanings were associated with an uncertain phonetic form, which could have been any of the three. Actually, they seemed to know they were not saying "I *luck the door." They probably assumed that (lŏk) = <l-*a*-c-k>, instead of <l-*o*-c-k>; once they became aware of the relatively less common word <lack>, they were confused. The same seemed true for <scribble> and <scramble>. The former may be less currently used, whereas "scrambled eggs" are common in everyday life.

Another example of confusion with similar sounding words has also already been mentioned--the two meanings and pronunciations of <wind>. It was likely that João had needed to use the word (wĭnd) more often than the word (wīnd).

The lesson on vowel contrasts in derivational spelling yielded some evidence that meanings of related forms are not always clear to learners. João asked about the meaning of <wisdom>, although he knew the meaning of <wise>. Aviva and other members of the group explained that <wisdom> is the noun of <wise>. Aviva told him, "When someone is wise, that person has wisdom." He did not seem to have trouble with the explanation, so it was a little surprising that he asked the question at all.

Students encountered other words that were difficult for them in the lesson on derivational spelling. The word <prescription> brought about a great deal of discussion. We analyzed the parts of the word, isolating <script>. Danuta contributed the word <inscribe> as belonging to the same family. We began to work with the meaning of the

root. Danuta said that in the Middle Ages, a scribe was a person who kept records. The students realized that <inscription> was the noun form of <inscribe>. Having established that the meaning of the base was related to writing, João suggested that "to fill in a form" might be the meaning of <inscribe>. He and Danuta both were amused that this was not an accurate deduction.

Other words in the lesson were challenging. It seems that the students' were familiar with the pair <collide/collision> from recent news regarding a serious train accident in a nearby locale. They had some difficulty with choosing <ignite/ignition> in a context related to starting automobiles. They also had trouble with the idea of needing to use "precise vocabulary" in a composition to express ideas clearly. They insisted on "*describe vocabulary," and no one offered <descriptive>.

There is no doubt that the vocabulary level of the learners was a factor in their ability to spell and to comprehend the complexities of English spelling. The lessons designed to assist students in their attempts to grow in these areas were challenging. The following section analyses student responses to the materials themselves and to the learning strategies that went along with them.

Lesson Design

The lessons were designed to reach college students with information and provide practice. The goal was to experiment with ways of presenting a complex body of knowledge and giving the learners opportunities to participate in activities geared toward mastering the concepts and developing spelling skills. This section analyses the learner

responses that can be traced to the lesson design or to the planned activities. The analysis centers on the level of difficulty and the amount of information presented in each lesson. It also examines the presentation of the information and the instructions for clarity. Finally, it describes and interprets events in the study that relate specifically to the practice exercises and other activities in the lessons.

In general, the amount of information presented in a short period of time was excessive. This can be seen in every session of the study and in every lesson. Learner fatigue may have contributed to a certain reluctance to respond, or silences could have indicated confusion due to the overwhelming amount of material. Even so, based on the events of the study and the materials themselves, it is possible to make observations about the extent to which the learning experience met the needs of the learners.

The information in the first lesson was delivered in a lecture mode, and the students were not given a study sheet containing notes or an outline of the main points. It is unclear in retrospect what the students were grasping, but the plan was for them to attain a general familiarity with the features of the English writing system. Specifically, it was important to see that there is a system with organizing principles, and that it is an alphabetic system in which letters represent sounds; further, that there are multiple ways to represent the same sound and each letter can represent more than one sound. Students needed to know that there is choice in representing sounds and that learning the system means getting used to making choices and having some general ideas about which choices are possible. Finally,

they were prompted to recall that adding endings to words involve spelling issues that can be identified and studied.

Unfortunately, the students were not asked to respond to any questions that would have tested their understanding. A slower, more deliberate pace to the presentation would have allowed for more careful preparation of the learners for the study of spelling. It would have been good to know what kind of background knowledge, if any, they had of the general points in the lecture and to what extent the lecture had succeeded in establishing a uniform point of departure for the study.

As mentioned in an earlier section, the students appeared to have some knowledge of the concepts that were presented in the orientation lesson, but the evidence was mostly in the form of nonverbal responses. For example, at the mention of the alphabetic principle (letters representing sounds), Sing Tak nodded, so he may have been following that part of the presentation and was registering some familiarity with the concept. Also, later on in the study, Aviva said that she knew the whole idea behind the spelling lessons was to try to spell words according to sound. Nevertheless, their knowledge was insufficient, at least according to Danuta. She laughed when I said that the lessons would guide the students through the writing system, and that they would be able to see some of its organization. She seemed to indicate that she had seen only chaos up to that point.

In addition to the amount of information, the level of difficulty was also a pervasive issue throughout the study. In the introductory lesson, some of the material was rather technical, yet the explanations were cursory. Learners need to become aware of these

points; however, a quick pass over them at once may not be very useful, especially if the students lack training in metalinguistic skills. An example of the problem became apparent in the first session when it was assumed that the students had some knowledge of the International Phonetic Alphabet. Whether they actually were familiar with it, or how comfortable they were using it, was never completely ascertained. Nevertheless, transcription systems were used in the lessons, and at least one student displayed some sensitivity to the details of the symbols. Kyung Hee had a question about the OM symbol (ô) for the pronunciation of the vowel in the keyword <law>. She wanted to know why an <o> was used in the symbol when the spelling used the <a>.

The use of charts to display the English vowel phonemes met with mixed success, perhaps due to an overly ambitious presentation. The students' awareness of the total repertoire was increased, but so was their confusion, especially with respect to (o͞o), (yo͞o), and (o͝o). Some of the problems could have been avoided altogether by limiting the amount of information given, by-passing the issue of phonological awareness. There was no doubt, however, of the students' interest and willingness to work hard to improve their ability to hear and produce vowel sounds. The supplemental exercises designed to practice identifying vowel sounds in dictated words were well received. The students appeared to make a serious effort at pronouncing and writing. Then in going over the answers there was lively group participation, which has been described in detail under Phonological Issues. At one point, after the second session devoted to this, students appeared to be discouraged. It was evidence of their struggle and need for protracted study over longer time.

Amount of information and level of difficulty will continue as a theme throughout the rest of this section as the lesson design and the students' responses to it are discussed. The phonological issues raised early in the study were also a major concern for the lesson designer, the teacher and the learners.

The design of the first and second lessons took into account the fact that teaching spelling requires an oral component so that learners know which sounds they are trying to spell. The students were asked to practice making the target sound and to associate it with letters and spelling patterns. For long and short <i>, while the students did not have a problem controlling the sound contrast, they needed help distinguishing short <i> (ĭ) from long <e> (ē).

In addition to making the sounds and practicing them in words, both lessons had short sentences that were also part of pronunciation practice. The sentences were univocalic, i.e., all the content words had the same vowel letter and sound; therefore, they were lacking in sense to some extent. There was some awkwardness in the group as the students took turns reading these sentences, perhaps in part because the students did not really need more practice with the pronunciation of the sound. Nevertheless, the long <i> sentence "White rice is fine" elicited an exchange among the students about different types of rice, with Kyung Hee commenting, "White rice is more delicious than brown rice." It is significant that a student who normally had difficulty speaking was volunteering to participate in a discussion related to meaning (rather than spelling).

The issues surrounding the vocabulary level spelling lessons for adult English as a second language students bear mentioning again in this survey of lesson plans and learning strategies. The words used in the second and third lesson are typical of one-syllable English words containing the target sound and spelling patterns. It is not possible to find any other words, yet unfamiliar vocabulary emerged as a major question. Whenever the learners encountered an unknown word, their focus shifted away from spelling. The word pair exercise in the third lesson is an example of how questions about meanings of words can interrupt the flow of the practicing of the spelling pattern. It took a while to establish a comfort level in the understanding of new words before returning to the spelling issues.

Despite such drawbacks, there were some positive outcomes. Search for meanings prompted spirited discussion among the students and with the teacher. When students didn't know a meaning, in the process of asking for and talking about it, they said the word several times, often looking down at the word. It seemed likely that pausing over a new word might have helped them memorize the spelling.

Moreover, there is the clear advantage of fostering the use of the dictionary, a tool that may be underused by some learners. Every time students reached for a dictionary, they reinforced the spelling pattern visually and practiced reading definitions. In this study, students used electronic dictionaries extensively. It began with Gauri and João, who were already users of these innovative tools. The other students were given instructions on how to use them; the devices themselves were made available to the students for use during the sessions since the resource center had several. Every time students typed a word into the

electronic speller, they were obviously reinforcing the spelling. Easier access to the definitions often made it possible to return to the spelling lessons quickly and to alleviate some of the tedium of dictionary use.

Although not planned, the use of supplemental resources was often a natural response to the instruction based on the spelling materials. When lexical items were a problem, students spontaneously turned to the latest technology at hand. When they needed a way to cope with weakness in aural proficiency, several students asked for computer programs to practice vowel sound discrimination. Kyung Hee and Aviva came early to the third session and spent some time using the computers. The program, ELLIS Senior Mastery, allowed the students to see a minimal pair, listen to a pronunciation and choose the matching spelling.

The spelling exercises provided in each lesson were geared toward giving the students the opportunity to use the spelling rules covered in the lesson to write words correctly. To return to the word pair exercise in the third lesson, the goal was to practice transforming short vowel words to long vowel words and in the process to have the students apply the rule consistently. Some of them showed that they could not do it. For example, João asked if he should use <tt> in the spelling of <quite>. Natasha added an <e> to <lick> to spell <like>. She had gotten the idea that a long vowel spelling includes a final silent <e> but not the single consonant component of the VC <e> rule.

The students seemed to like the exercises where transformations were involved. These were active moments for them when there were performing tasks that were simple

and logical. The learner wrote the new word, saw the difference, and said each of the words. The other written activities in the first and second lessons were also aimed at promoting something like word play. The cloze-type exercises were supposed to be stories, and there were question and answers, which were supposed to be a game-like format. This was an attempt to develop stimulating pedagogical methods using traditional activities. The students demonstrated some appreciation for the exercises as a means to check their understanding of the concepts.

In reviewing the data on the fourth lesson, and the one-hour session in which it was taught, it is again apparent that too many facets of the topic were involved. The lesson began with a statement of the rule. There is a certain density about the way the rule is stated. It makes the point that there are multiple graphemic options for English vowel sounds and indicates that the spellings which are outside the basic long and short vowel patterns are less frequent and sometimes limited to a small number of words. This last point was probably the most important one in dealing with the <-igh-> spelling of long <i>, but it got somewhat overlooked. Later it was difficult to convince the students that they were dealing with a bounded list and that the problem was manageable.

The students' curiosity about broader issues, such as simplified commercial spellings and archaic spellings has already been discussed in detail. These points were not included in the materials, but they came up in the discussion because the students wanted explanations for what they saw as an irrational element in the spelling. When I said that the <-ght> was related to a time when words were pronounced in accordance with those letters,

Aviva volunteer that <night> was like the German word *Nacht*. Danuta agreed. It was apparent that information on the historical background of spelling was appropriate for these students and could be used more as needed to make spelling more understandable.

The display of <-igh(t)> words was not particularly helpful in dealing with the problem of <height>. More work was needed to sort through the difficulty resulting from this anomalous spelling. The students brought up the fact that <height> is related to <high> in pronunciation, not to <eight>. A more complete rule would have stipulated that /-ayt/ is <-ight> in a small number of words; it can also be <-ite>, (often seen in certain homonyms and simplified spellings), and <height> is an exception.

We moved from all the complexities of that issue to the next variant spelling: using <y> to spell long <i> at the end of short words. Although this part of the lesson does not have directions, the students automatically began to read the list, demonstrating that they were getting used to the learning strategy suggested by the materials. When João mispronounced <pry>, it showed how the vocabulary issues affect this type of exercise. His inability to apply rules consistently in oral production was related to the fact that he was unfamiliar with the word. He was able to pronounce all the other words correctly. The exercise required the students to use the sound-spelling rule given to read non-contextualized, maybe unfamiliar words. The other students could produce correct sounding words, even if the meanings were not known.

Many of the lessons contained questions, often at the end of the lesson, which were intended as study questions. The idea was to review the rules and to lead the students to

produce other examples of words that illustrate the rule. Whenever this approach was attempted, the results were minimal. In the fourth lesson it was a little surprising that only Gauri offered any other homophones: (<red>/<read> = /rèd/). No one even gave <write> and <right>, a pair that related directly to the topic of the lesson. These attempts to generalize were untimely. In all of the instances of this technique, the students had done too much in the session, and besides, they probably had not learned enough to adopt a broader perspective.

In the written practice for the fourth lesson, the cloze exercise in which the student had to fill in the target word by the meaning of the sentence, the context did not work to elicit the word. For example, this item was problematic: He was dressed very formally. He wore a blue suit with a white shirt and a red tie. Apparently the students were not familiar with typical formal men's wear, but both words had been included in the lessons. It seemed that the students did not grasp the words as spellings and as meanings when they had to fill in blanks, so <rye> and <pie> were not easy choices for "She bought _____bread and apple _____. Still, the exercise brought about interaction between students. It was interesting to listen to the Russian explain rye bread to the Korean.

. The final attempt at variety in the written practice involved using the target words in idiomatic expressions, such as "out of sight, out of mind." The students were unsure about the directions telling them to simply read the sentences, find the words with the long <i>, and underline them. This was an instance when it would have been appropriate to use the

spelling lesson as a starting point for another language learning activity stemming from the idioms.

The lesson on consonant doubling was another one where a mechanical exercise turned out to be very effective for the learners. It was essentially a written transformation-repetition drill showing categories of spellings, i.e., ± consonant doubling. There were no sentences or other type of activity, but the students did not express any boredom. As they worked, all of them consulted electronic dictionaries (except for Sing Tak, who used a print dictionary). The students may have been checking the spellings of the inflected forms, or the meanings of the words were probably still posing a problem, even though many had been used in previous lessons.

One of the adjectives that evoked questions was <prim>. The interaction surrounding this word illustrates once again the dilemma for both the learner and the teacher developing lessons. The students did not know the meaning. Aviva suggested that there could be a connection with /prima/, as in <prima ballerina>. She was drawing on her broader knowledge; she was also focusing on a written string of letters common to both, <p-r-i-m>, and not on the phonemic values of the vowel. Another potential source of confusion would have been with words such as <prime> and <primary>, but the students did not raise this one.

Word choice in lesson design was only one of the crucial decisions. Another one, and perhaps the most consequential, was the decision to treat only one-syllable words when dealing with basic spelling. Spelling multisyllabic words by syllable pattern presented a

significant challenge to all the participants in the study. Questions about syllables had been in the background of the sessions almost from the beginning. Kyung Hee and Aviva had asked questions about how to distinguish syllable boundaries in spoken words in the third session. Kyung Hee said she knew that there were two vowels in a two-syllable word.

In the fifth session, long and short vowels in syllables were introduced by way of a dictation. It was an attempt to spell disyllabic words from sound-letter correspondences. Again, students raised questions about syllable boundaries, this time with added issues concerning stress. João and Gauri paused over the word <pilot>. Gauri asked where the syllable "goes." In other words, is it /pay lét/ or /payl ét/?

Teaching the concepts related to syllables and spellings was a difficult task. The lesson concerning these issues was basically a rule sheet without any exercises. The students responded with group interactions that can best be characterized as hypothesis formation and testing. For the most part, the learners showed the willingness and the capacity to become more aware of complex orthographic features through exploration and discussion. Still, the lesson attempted to treat an excessive number of complicated concepts, and several lessons could have been created from this one.

The issues surrounding syllable stress and spelling also required much more time and more lessons than were possible to provide in this study. The students considered the lesson treating this subject the most difficult. The problem was to try to make the learners aware of vowel reduction in unstressed syllables while still using words with long and short <i>. The instructional method can best be described as word analysis. It involved

analyzing the number of syllables in a word and comparing the stressed and unstressed vowel sounds. Most of the students were rather silent during most of this part of the session. There was some discussion of the rule, which was given on the pages distributed to the students, and some students used dictionaries to explore pronunciation and stress. It was impossible to do the written exercise devised for the lesson, because it was much too hard.

The last lesson of the series was an effort to lead the students to an understanding of the wider use of long and short vowel alternations in word forms. For the most part, the students were able to follow the instructions and to write the words as directed. They listened to the explanations and read the rules. There were few questions, so it seems that the rules were clearly stated. When the lesson focused on identifying stressed syllables and exploring stress patterns, there was more activity. The students seemed very interested in how to pronounce the words, demonstrating again the importance of an oral component in spelling lessons.

In the practice exercises, the context was adequate to enable the students to fill in the blanks with the appropriate words. The students wrote all the words and then practiced pronouncing the words that were new and difficult for them. There were some difficult words used in the lesson, so there was discussion concerning their meanings. Danuta's responses about the root word <scribe> and its relation to the meaning of all the other words (e.g., *describe*, *inscribe*, etc.) points to a potential vocabulary lesson.

On the whole, the students responded positively to studying spelling with the materials provided. The sessions were for the most part characterized by inquisitive

learners focusing on a challenging aspect of the language. Where the lessons were too long or excessively difficult, they displayed a certain amount of tolerance and even cooperation, as their questions often were quite revealing. There was little doubt that this group considered orthography and phonology to be vital areas for study. Even though the instructional design and the material were under development, the students' regular attendance at the sessions and positive comments indicated that they benefited from the experience of the study group.

Chapter VI

CONCLUSIONS

This dissertation has addressed teaching and learning issues surrounding orthography in English as a second language in a community college setting. Spelling lessons were created and used with typical students. Their responses to the spelling materials and the instruction based on them yielded some insights into the students' learning needs.

Major Findings

At the beginning, the research focused on the content of the instruction in an attempt to determine what a teacher needed to know in order to help students with spelling problems. The technical complexity of the data from the linguistic studies of Hanna et al. (1966), Venezky (1970), and Chomsky and Halle (1968) was one reason for turning to materials already distilled for teaching, like the spelling series by Henderson and Templeton (1994). Now Carney (1994) has synthesized the data from linguistic and pedagogical sources and provided a comprehensive descriptive survey of spelling that is fairly accessible. Instructional designers who are seeking a detailed picture of English spelling can use this reference work as a knowledge base.

Another reason for drawing on materials aimed at elementary school learners was that there were only a few resources available for the adult college English as a second language population. Vernick and Nesgoda (1980) would have been the logical choice, and Kirn (1988) is also suitable. The former seemed to be more geared toward teaching the sounds of English than the spellings. As for the latter, it seemed less academic than appropriate for the target population, community college students in a pre-academic English as a second language program.

Many of these students are highly motivated and ambitious. They may have an intellectual orientation that reflects their educational background. They study English to pursue academic and/or professional goals. Often they are compelled by practical necessities to learn quickly. These students are likely to have their own perceptions of their learning needs, as many adult students do. If they are independent learners, they will seek out what they need to accomplish their goals.

College students of English as a second language who request help in spelling are generally self-directed and studious. They are most familiar with a direct approach to instruction. Information is presented and explained by the teachers. The students listen, ask questions, and practice the material until they are comfortable with their understanding and mastery of it.

Instructional objectives for the spelling lessons need to relate to the characteristics of the students. The aim is to raise the students' level of awareness of the systematic nature of English spelling. By increasing their understanding of the system, they can

develop a functional orientation within the orthography, which will permit them to deal more confidently with written and spoken words.

One of the major instructional design questions concerns the sequencing of concepts in viable units of instruction. For English spelling, the point of departure is the phonemic base, with particularly the extensive vowel repertoire. Discrimination of vowel sound contrasts presents a great deal of difficulty. Consonant phonemes, while not as difficult, also present problems that need attention, in particular consonant clusters. Some learners will attempt to insert a vowel between the two consonant resulting spellings such as <*calass> for <class>.

In dealing with the spelling of vowel sounds, students need grounding. Basic spelling patterns for short and long vowels can be used effectively. For example, students can hear the difference between the spoken forms of <cap> and <cape>, and there are numerous examples of this type. Students can practice identifying the vowel sounds in one-syllable words spelled according to these two patterns.

Once the students become more familiar with the long and short vowel sounds and the basic spelling patterns, they can start to learn how and when to spell them with vowel digraphs. If the learners can identify the sounds in a word, only the choices of spellings for the particular sounds remain.

After working with common variants, e.g. (ā) = <ai> and <ay>, then students can more easily handle the other less frequent variant spellings, e.g., (ā) = <eigh>. Then the notion of graphemic options and vowel digraphs can be applied to the remaining vowel

sounds in English, those that are not part of the short and long pairs, e.g., (ô), (oi) and (ou).

By concentrating on the vowel sounds in single-syllable words, students can reinforce the spelling concepts and focus on vowel sound discrimination at the same time. When the learners become more confident, multisyllabic words can be introduced. However, how to deal with the issue of stressed and unstressed syllables must be considered carefully. It is advisable to make the students aware of the difference in the vowel quality in the stressed syllable and to try to identify sounds and spelling patterns that are familiar to them from working with one-syllable words. In this way, it will be possible for the students to spell at least one vowel in each word from their knowledge of basic sound-letter correspondences. Later they can work on the spelling of reduced vowels.

Inflectional spelling rules also make more sense once they are associated with sound patterns. In one-syllable words, for example, consonant doubling before endings beginning with vowels is determined by the short vowel sound. Having already worked intensively with vowel sound contrasts, spelling patterns, and graphemic options, students will find inflectional spelling easier to understand and master.

Likewise, spelling derived forms, such as <divine> and <divinity>, will be facilitated once the students have achieved a stable command of the broad range of vowel phonemes and have learned how the orthography represents the sounds of the language. This study dealt with only one vowel sound contrast, short and long <i>, and attempted to

show features of the orthography at all the levels of the system.

The activities, learning strategies, and material resources for spelling instruction need to be structured around the four language skills, listening, speaking, reading, and writing. They also need to engage the learners in meaningful techniques for demonstrating and reinforcing the target concepts. It is a good idea to provide as many examples as possible so learners can see the frequency of occurrence of the generalization. Repetition of analogous sound-letter strings can help build the ability to recognize a particular sound. For instance, seeing and hearing a list of rhyming words such as <bake>, <cake>, <fake> and so on, can help someone who is trying to identify vowel sounds in spoken words. Adult students of English as a second language, who may be otherwise somewhat sophisticated as language students, may never have had any initiation into English orthography from this perspective.

Students will often have recourse to dictionaries, both print and electronic, in learning spelling as they work with orthographic rules, patterns and generalizations. Print dictionaries tend to be used when technical phonological details, usually concerning word stress, are needed. Electronic dictionaries are effective tools for quickly locating the meaning of new words encountered during a spelling lesson.

The lessons created for this dissertation employed the strategies and techniques described here among others. Formative evaluation involved using the lessons as the basis for instruction with a representative group of students. An analysis of the student responses to the instruction and to the materials showed the students' interest in the topic

of spelling. They showed a good deal of interest in rule-based learning. The basic spelling rule for short vowels (VC) and long vowels (VC<e>) were easily apprehended. The students demonstrated a definite curiosity regarding variant spellings and broader issues such as simplified spellings for commercial purposes and technical spellings of homophonous words, e.g., <pi> and <sac>.

Additionally, rules for adding *-ed, -ing, -er, -est,* with which students were already somewhat familiar, were embraced enthusiastically. It seems that the students were approaching these issues for the first time as a sound-based issue, rather than simply as a spelling rule related only to letter patterns.

When it came to working with multisyllabic words, the learners were very willing to explore orthographic principles. However, time constraints in this study made it difficult to do more than an introduction to some of the issues involved. In order to learn to spell words with more than one syllable, it is necessary to have at least some grasp of word stress in English. This is an area of which the students in the study had very little knowledge. Without it, it is difficult to identify stressed, full vowel and to contrast it with the unstressed, reduced vowels.

Phonological competence was a distinct problem throughout the study as the students dealt with spelling. Their most obvious weakness was lacking control of the phoneme base, in particular the vowels. This fundamental inability to discriminate auditorily was a severe limitation for correct spelling. For example, when it came to choosing a vowel for a word such as <fog>, for some of the students it was pure

guesswork.

The vowel in <fog> is especially difficult for students who do not associate the sound /a/, with the letter <o>. They think /hat/ is spelled <hat>, when it is really spelled <hot>. They also think /hæt/ is spelled <hat>, but they hear it as /hat/. A similar difficulty may arise for <man> and <men>. It seems that /æ/ is not easily distinguished or pronounced, so only /mɛn/ is heard or produced.

If sounds cannot be distinguished and/or produced orally, they are likely to be misspelled. The previous example of confusion at the level of vowel discrimination is just a small tip of a great mass that exists for most students. It follows that some of the more complex phonological issues will present major obstacles, for both pronunciation and spelling. Syllabic consonants in the words <kitten> and <ribbon> were examples. The students had little experience with the phonological questions involved in pronouncing the final syllable and no way of knowing how to deal with the spelling.

In fact, the students had very little experience with syllable stress and vowel reduction, but as the study reached these lessons, it seemed as if the learners were more aware of what they needed to learn and more prepared to go on. Another area where they needed to grow was vocabulary. It is difficult to illustrate spelling principles to students who have small vocabularies. In trying to establish a pattern, it is necessary to use as many words as possible. The students quickly encountered words that were unfamiliar to them, such as <dim>, <grim>, <glide>, <sigh>, <thigh>, and <pry> among many others.

Checking the meanings of words provides an occasion for oral interaction and

therefore language use. It is not always detrimental to the flow of the spelling lesson for the learners to discuss meanings. Their discussions enhance the learning process by causing them to repeat the word as they explore the meaning with other learners. If electronic dictionaries are used, the learners will also practice writing the word, as they look it up. This also provides an opportunity to practice the spelling of new words.

The eight lessons and the supplemental materials created for the study were adequate to support the learning objectives and the research objectives. For the most part, the students were able to follow the ideas and do the exercises. The lessons served as a base for instruction in spelling. By using them in teaching the orthographic concepts, it was possible to learn about the students' interest and need for instruction in this aspect of the English language. However, time constraints and the limitations imposed by the research design affected the scope of the material covered in the lessons. Using only one vowel contrast (in this case long and short <i>) and covering the hierarchy of orthographic features in a short period of time created an artificial learning situation. Materials like the ones designed for the study can be effective for adults learning spelling in the appropriate instructional context.

Pedagogical Implications

The results of the study suggest that adult learners of English as a second language have a need for instruction in spelling and that systematic, rule-based instruction can be designed and implemented effectively. Courses in a pre-academic

college program include grammar, speech, reading and writing. Students take up to 15 non-degree credits of English before being admitted to degree-credit courses. The remainder of this section discusses how instruction in English orthography can be integrated into the language learning experience community college learners of English as a second language.

Spelling in Speech Classes

A logical place to begin to incorporate spelling into the curriculum is in speech classes. Speech comes before writing and writing systems are ways of representing spoken language. Second language learners, particularly those studying in formal college programs, receive instruction in English pronunciation. They are taught articulatory phonetics, and they proceed phoneme by phoneme learning to pronounce each one. As the students are learning the sound system, they could also learn the spelling system.

Incorporating information about spelling into the teaching of vowel and consonant sounds would require adding a section on spelling patterns and including the major and minor graphemic options for each sound. Then the words used for pronunciation practice could be grouped according to shared spelling features. For example, to practice /ey/, the following groups would serve to reinforce spelling options for the vowel: 1) *lake, rake, snake* 2) *chain, rain, train* and 3) *day, gray, play*. Students could also begin to formulate a sense of relative frequency occurrence of the possible spellings. The students need to become familiar with infrequent spellings that occur in common words, e.g., /ey/ =

<eigh> in *neighbor*, and *weigh*.

It would be very useful to treat spelling in pronunciation lessons on syllable stress. Having learned basic sound-letter correspondences, students would be more aware of the spelling patterns and graphemic options as they are encountered in stressed syllables. In working with the pronunciation of syllables, students need to focus on the spelling as well.

Adult students come in contact with much of their new vocabulary through reading. Since they are not well acquainted with stress patterns and vowel reduction, there is a tendency to pronounce all of the vowels fully. Eventually, these spelling pronunciations may help them remember how to write the words correctly; however, for correct pronunciation, students must learn to reduce the vowels in the unstressed syllable. They need to abstract away from the written form to produce the spoken form.

Students at all levels can become familiar with how speech is represented in writing. In the end, both their pronunciation and their spelling would be strengthened.

Spelling in Reading Classes

Students who are learning English are very concerned about how to pronounce the words that they read. For the most part, college courses do not address this concern. It would be a good idea to introduce some letter-sound correspondence exercises in reading classes. Students would practice mapping sound onto written words, which is an important part of learning to read and learning a new language. Even a limited number of brief lessons, especially in the lower levels, could make a difference to the learners. At

the intermediate and advanced levels, students would apply the concepts learned in speech classes regarding syllable stress, pronunciation, and spelling.

In addition to addressing the issue of decoding written English, reading classes are a good place to work on vocabulary development. Students are in constant need of strategies for dealing with unfamiliar vocabulary as they read. Since it is often necessary for the learner to look up words and write down meanings, it is logical to proceed with various types of word study. One of them could easily be exploration of orthographic features exemplified by the words they are learning. For instance, students could look for long and short spelling patterns or identify digraphs. There are also numerous opportunities to study the forms of words, the affixes, and the effects of affixation on pronunciation and spelling. Students could be directed to look for words exhibiting targeted orthographic features in reading texts.

Integrating letter-sound correspondence and word study into reading classes does not have to interfere unduly with other instructional objectives, namely reading comprehension. If orthography were included systematically from the early stages of learning, time required for these topics could be minimal. Frequent, short lessons would most likely suffice. Furthermore, reading for the purpose of identifying and exploring spelling issues would be done independently from reading for comprehension, most likely after texts have been read and discussed for meaning.

Students who are at ease with orthography are apt to be better readers on all levels of interaction with the text. The more familiar they are with the way orthography

functions the less distracted they will be by it. Developing the ability to pronounce the words they read will no longer be a pressing concern leaving students free to concentrate on understanding the text.

Spelling in Writing Classes

Students who are learning to write English have the most need for a functional understanding of spelling. They need strategies for remembering the spelling of words that they have seen or for producing the spelling of words they have heard. Writing teachers can provide students with spelling guidelines. The rules, patterns, and correspondences can be presented and referred to during the writing process.

When students are editing their papers, they can apply rules and other generalizations to figure out the spelling they do not know. Students need to know the possible sources of confusion. A few basic ones are vowel and/or consonant substitution (e.g., <o> for <a>, or <b> for <p>), incorrect choice of graphemic option (VC<e> or a vowel digraph), or incorrect tactic (doubling or non-doubling of a final consonant). Understanding their errors in terms of the rules of the system will help students gain mastery of spelling.

Students with limited vocabularies often need to edit their papers to improve their word choices. The problem is frustrating because students do not know another word. Rule-based spelling lessons have a beneficial side effect: vocabulary development. When learners grasp a pattern, they make the connection between the sounds and the letters. To practice and reinforce the point, it is natural to write as many words as possible with the

same pattern. For many learners, this process quickly leads them to new vocabulary. For advanced beginners, words such as *end*, *bend*, and *send* are familiar, but *trend* is not.

Spelling lessons can lead naturally to vocabulary lessons, and students with strong vocabularies will probably be better writers. There is no reason not to include spelling lessons in writing classes, especially at the beginning levels. These lessons could be frequent and brief.

Teaching spelling parallels teaching pronunciation in speech classes. Just as clear pronunciation is a necessity for oral communication, accurate spelling is a requirement for effective written communication. For students of English as a second language, spelling may seem like more than just one of the requirement of good writing. It may seem like the first and most important one to some students. If they are learning how to spell because someone is teaching them, they may become freer with written expression and grow as writers.

Spelling in Grammar Classes

Adult students of English as a second language in community college typically attend classes where the structure of the language is taught. The teachers and the students consider these classes very important. The students seem to be looking for explanations of how the language works. Most adult learners think it is important to understand grammar rules.

It is in the grammar classes that the morphological aspects of English orthography can be explained to the learners. One important area, the sound-spelling relationship in

adding inflectional endings, needs to be explained and practiced. In order to do this, students must be familiar with the vowel phonemes, particular the long and short contrasts. Furthermore, students must be taught that consonant doubling is an orthographic tactic to mark a short vowel sound in the base verb. Similarly, the absence of consonant doubling in verbs with long vowels is explained by the fact that -VCV- is a long vowel spelling pattern.

It is important for all grammar teaching to have an oral and a written component. The language as it is spoken differs from its written form, and students need to learn both. The orthography is an essential component of written language. Omitting it from the teaching of grammar leaves a gap in the learning experience. Filling the gap will strengthen the foundation that grammar instruction is meant to provide for the adult student of English as a second language.

Spelling in Supplemental Instructional Support

In addition to integrating spelling into the English as a second language courses, it is possible to provide instruction to students on an individual basis in a resource center. Spelling assessments can be administered, and students can be referred to particular lessons as indicated. A variety of materials would be made available, including texts, audiocassettes, and print and electronic dictionaries.

Students could work with the material independently or with tutorial support. Tutors would need to be trained in the content of orthographic instruction and in methods for assisting the students. Finally, computer-assisted spelling instruction would make a

great deal of sense in a resource room. Students could listen and try to write what they heard. The computer would provide feedback.

Computer software and other materials in a resource center could greatly increase student access to learning opportunities if spelling were not to be integrated into courses. Even if more class work in orthography were available, supplemental instructional support is popular with adult learners of English as a second language in community colleges. These students appreciate the more private environment, self-paced instruction, and extra materials in a resource center.

Directions for Future Research

Development of more spelling lessons to cover the whole orthographic system targeted for the same population is needed. Materials compiled in this study as well as those of Bassano (1980), Kirn (1986), or McClelland et al. (1979) can serve as a starting point. Teaching techniques need to be refined. Explanations of rules, dictations and fill-in exercises seem to work. However, other techniques and activities may be more effective. Games, pictures, and puzzles are used in some workbooks. Their effectiveness with this population could be assessed.

Instructional design exploiting the findings of this study should be undertaken to create a comprehensive computer software program for spelling instruction. An expanded overview of English orthography would become a database. A dictionary would also be included. Lessons would draw on contents of the database. The

multimedia program would provide listening, speaking, reading, and writing practice.

The students' responses to spelling instruction recorded in this study indicate interest and need for spelling instruction. In order to support the recommendations to integrate spelling into the curriculum of the English as a second language program, it would be interesting to determine whether the responses of these students are typical of students in general. Also, it would be worth examining the number of students who have serious language learning problems apparently related to spelling. It would also be useful to assess the outcomes of spelling instruction with students over time.

Dissemination of the results of this study would help instructors who have wondered about how to understand English spelling in order to teach students this difficult aspect of the language. Curriculum development in community college pre-academic English as a second language programs to incorporate orthography, both in classroom and supplemental instruction, would respond to a need perceived by many teachers and improve the language learning experience for many students.

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Appendix A

PROCEDURES FOR INITIAL INTERVIEW AND INTERVIEW QUESTIONNAIRES

1. Ask student to fill out Background Information Questionnaire
2. Turn on tape recorder; give name of student, date, time. (Turn off tape recorder.)
3. Conduct interview using Interview Questionnaire.

I am looking for students to participate in a research project of teaching English spelling. I am interviewing students who are interested in improving their spelling and who are available to attend the special classes that I will teach.

First, I would like to as you a few questions about you spelling and discuss the schedule with you.

Do you mind speaking with the tape recorder on? (Turn on tape recorder.)

Interview Questionnaire

1) **Could you please describe you problems with English spelling. (Give some examples of times when you have had trouble.)**

2) **What have you done (or tried to do) to solve you problems with English spelling?**

3) **Have you received any formal instruction in English spelling? What have your teachers explained to you about improving your spelling?**

4) **Do you think you would be able to improve your spelling by studying rules for English spelling?**

5) **Have you tried using an electronic speller or spell checking on a word processor? What has been your experience with technology? Do you see computer technology as a possible answer to your problems?**

4. Explain the study to the student

I am planning 6 spelling classes. They will be 1 hour long. The classes will begin in the last week of February and they will end in the second week of April. I plan to teach the classes on Tuesday afternoon from 3-4 o'clock. Students who participate must be available for all of the classes. It is very important for you to understand that if you begin the classes, I will expect you to attend all of them, unless you are

sick. Also, the classes will be videotaped so that I can study the tapes later. Do you have any problems with being in a videotape? Do you think you would be too nervous to participate comfortably?

These will be small classes taught by me, Prof. Miele, in the English Language Resource Center. The classes are part of by research for my doctorate. After I interview all the students who have volunteered so far, I will choose about 6-7 students. I will contact you as soon as I can. If you do not become part of this group, there are many other activities in the ELRC; maybe I can help you find a good one for you.

Thank you for your help.

Background Information Questionnaire

Today's date_____
Name_____
Age_____
Number of Years in the U.S._____
Level in American Language Program_____
Native Language_____
Country of Origin_____
Educational Background_____

Appendix B

LESSONS WITH LESSON PLANS

Lesson One - Facts about English Pronunciation & Spelling

Objectives:

1. Students will survey basic characteristics of the English writing system.
2. Students will differentiate the phonemes of English.
3. Students will analyze the English alphabet in relation to the phonemes and summarize the sound-to-letter ratio.
4. Students will identify consonant digraphs.

Materials:

Charts - English Phonemes: Vowels - Long, Short, & Other
English Phonemes: Vowels - Long & Short
English Phonemes: Consonants

The Alphabet
Vowel & Consonant Letters
Long & Short I Words

Activities:

1. Oral production of phonemes: listen, repeat; produce consonant, short/long vowel sounds

2. Discussion of the phonetic and dictionary symbols

3. Examination of sound-to-letter ratios and consonant digraphs

4. Preview of long & short <i> words

Lesson One - Facts about English Pronunciation & Spelling

A. Introduction

Successful spelling requires understanding the system. Any system is organized, has order, and regularity.

English spelling has various principles that determine the organization of the system.

How does English spelling function? It is fundamentally a writing system designed to represent the spoken words of the language. The sounds of a word correspond to the letters used to spell that word. /kæt/ = c-a-t. When one sound corresponds to one letter, we say that the spelling is alphabetic.

English is an alphabetic writing system in which sounds are represented by letters. However, English is not a simple alphabetic system: the same sound can be represented by more than one letter. And each letter can be used to represent more than one sound. For example: in /kæt/ /keyt/, /k/ = **c** and **k**.
For /ey/, there are words like /wey/, /weyt/, **way, wait, weight.**

This means CHOICE in the representation of sounds. Learning the system means getting used to making choices and having some general ideas regarding which choices are possible and then which one is correct.

Another principle of English spelling concerns the addition of endings for grammatical purposes. For example, **-s, -ed, -ing, -er -est**, added to a base result in pronunciation and spelling issues: **study, studies, studied, studying; pretty, prettier, prettiest.**

English vocabulary also includes the addition of prefixes and suffixes which affects pronunciation as well as spelling. For instance, **study, studies, studied, studying** also are related to **student, studious**. A word like **nature** can become **natural**; **athlete** can become **athletic**; **please** becomes **pleasure, pleasant or pleasantly**.

The lessons I am going to present to you will attempt to guide you through the writing system. I am going to try to show you how it is organized; that it really is not totally disorganized.

B. English Phonemes: Consonants & Vowels

When you are trying to spell a word, it is important to know which sounds you are trying

to spell. That is why we are going to begin with a review of English phonemes, or the sounds that English uses. PEOPLE CAN RECITE THE ALPHABET, BUT CAN YOU RECITE THE PHONETIC ALPHABET? Let's try it with the consonants. Please look at the chart, listen and repeat. **Next let's turn to the vowels. Again, listen and repeat.**

C. The Alphabet

Now let's look at the alphabet, the set of letters used in writing the language. Let's recite the alphabet. How many letters do we have? **26.** On the consonant and vowel phoneme charts that I have prepared, we have a total of **39** sounds, **15 vowel and 24 consonant sounds.** The alphabet needs to be enlarged by **13**, to have one letter for each sound. But the alphabet stays the same in size, and some letters are used in more than one way. **You might say that some letters work overtime.** Notice the **consonant combinations**, sometimes called **digraphs**, **<ch>, <sh>, <th>.** This is one of the ways that the writing system expands the alphabet.

Now look at the vowel letters, and right away we notice that <y> is used as both a vowel and a consonant. Does that help to cope with the shortage of vowel letters? Not very much. Remember we have **15** vowel phonemes on our charts and only **6** vowel letters. Again we have to expand the alphabet in some way to be able to represent all the vowel sounds when we spell them. We will begin to look at how that is done for long and short vowels in the next session.

To prepare for that session, please review the following lists of words. Try to practice pronouncing them; think about their spellings, meanings and if possible, add words that you know that have similar sounds and spellings.

English Phonemes: Vowels

Short		Long	
(ă)	cap	(ā)	cape
(ĕ)	pet	(ē)	Pete
(ĭ)	kit	(ī)	kite
(ŏ)	hop	(ō)	hope
(ŭ)	cut	(o͞o)	boot
		(yo͞o)	cute

Other Vowel Sounds

(ô)	law
(oi)	oil
(o͝o)	book
(ou)	out

English Phonemes: Consonants

phonetic symbol	dictionary symbol	keyword
/b/	(b)	bus
/tʃ/	**(ch)**	chin
/d/	(d)	dark
/f/	(f)	funny
/g/	(g)	get
/h/	(h)	hat
/dʒ/	**(j)**	jump
/k/	(k)	keep
/l/	(l)	last
/m/	(m)	map
/n/	(n)	nap
/ŋ/	**(ng)**	ri*ng*
/p/	(p)	paint
/r/	(r)	rub
/s/	(s)	same
/ʃ/	**(sh)**	ship
/t/	(t)	time
/θ/	**(th)**	thin
/ð/	***(th)***	they
/v/	(v)	very
/w/	(w)	way
/y/	(y)	yes
/z/	(z)	zoo
/ʒ/	**(zh)**	us*u*al

English Phonemes: Vowels

Long Vowel Sounds ("Name Sounds")

letter	IPA symbol	dictionary symbol	key word
a	/ey/	(ā)	cape
e	/iy/	(ē)	Pete
i	/ay/	(ī)	kite
o	/ow/	(ō)	hope
u	/uw/	(o͞o)	boot
	/yuw/	(yo͞o)	cute

Short Vowel Sounds

	IPA symbol	dictionary symbol	key word
	/æ/	(ă)	cap
	/ɛ/	(ĕ)	pet
	/ɪ/	(ĭ)	kit
	/a/	(ŏ)	hop
	/ə/	(ŭ)	cut

Other Vowels

	IPA symbol	dictionary symbol	key word
	/ɔ/	(ô)	law
	/ɔy/	(oi)	oil
	/ʊ/	(o͝o)	book
	/aw/	(ou)	out

LETTERS OF THE ALPHABET

A B C D E F G H I

J K L M N O P

R S T U V W X Y Z

VOWELS AND CONSONANTS

A **B C D** ***E*** **F G H** ***I*** **J K L M**

N ***O*** **P Q R S T** ***U*** **V W X Y Z**

VOWEL LETTERS	CONSONANT LETTERS & COMBINATIONS
A	B
E	C
I	CH
O	D
U	F
Y	G
	H
	J
	K
	L
	M
	N
	NG
	P
	QU
	R
	S
	SH
	T
	TH
	V
	W
	X
	Y
	Z

Lesson Two - Short <i> in One-Syllable Words

Objectives:

1. Students will pronounce short <i> in isolation, in word lists and in words in sentences.
2. Students will write one-syllable words containing short <i> spelled according to the target-spelling rule.
3. Students explain the spelling pattern for short vowels in one-syllable words: VC#, and give examples of the pattern in words with other short vowels.

Materials:

Study sheet and exercises designed for the target concepts and objectives.

Activities:

1. Reading the information provided for the lesson (sample words, pronunciation and spelling rules)
2. Pronunciation practice of /ɪ/
3. Discussion of meanings of lexical materials needed for the lesson
4. Written practice of target spelling concept using fill-in and rhyming exercises

Lesson Two - Short **i** in One-Syllable Words

Basic Words: The sound of short **i** as in:

if	in	is	it		
will	him	his	with	this	which
big	thing	dish	kid	rich	win
sick	kiss	inch	drink	gift	milk

Pronunciation: Short **i** is a lax vowel. Do not spread your, and the cheeks and relax your tongue.

Practice making the sound.

Repeat the sentences:

Which kid is rich?
His big kid is with him.
This kid will drink his milk.
Give him his gift.

Spelling: In one-syllable words, short **i** spelled with the letter **i** + a consonant.

Look at the list of words. Notice the short vowel spelling pattern. Pronounce each word. Make sure you know all the meanings.

hit	fist	thick	trim
hill	wrist	thin	clip
slick	shin		snip
slip	squint	limb	
skid	blink	twig	
	wink		
spin	fling	lid	
swing	sling	rim	
swish	flick	brim	
twist	flit	brink	

In the exercises below, fill in the blanks with one of the words from the list.

All of these words are related to **parts of the body**.

1. The angry man shook his _____.

2. In the bright sunshine, without sunglasses, we cannot keep our eyes open. Sometimes we _____ our eyes, or maybe we have to _____.

3. After my friend told a joke to his friends, he _____ at his girlfriend, and she smiled back at him.

4. The beautiful woman has an expensive bracelet on her _____.

5. The part of the leg between the knee and the ankle is called the _____. When the girl fell down, she injured her _____.

This is a story about **winter**.

The road was _____because of the icy storm. I was driving down a _____ and suddenly my car began to _____. I couldn't stop the car. Finally I went off the road and _____ a tree. I got out of my car. I tried to walk but I just _____.

These sentences are about **children and motion**.

Children like to go on a _____in a playground.

Some children like to _____ a top. They enjoy watching it turn round and round very fast when they _____ it with their fingers.

All of these words are related to the idea of **throwing**

When you get home, if you are in a hurry and don't have time to hang up your coat, you will probably _____ it on a chair.

Before I go anywhere, I _____my bag over my shoulder and make sure I have my keys.

When teams have to decide who goes first, they _____ a coin.

Write words from the list above that **rhyme** with each of these words. Then ty to write other rhyming words each column.

swing	slick	trim	snip	wink
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

What spelling pattern is evident in all of these words?

You spell words with other short vowels by using the same spelling pattern. Can you give some examples?

Lesson Three - Long <i> in One-Syllable Words

Objectives:

1. Students will pronounce long <i> correctly in isolation, in word lists and in words in sentences.
2. Students will identify the long vowel spelling pattern in long <i> words and compare it to the short vowel spelling pattern.
3. Students will write words containing long <i> spelled according to the target pattern.
4. Students explain the spelling pattern for long vowels in one-syllable words: VC<e>#, and give examples of the pattern in words with other long vowels.

Materials:

Study sheet and exercises designed for the target concepts and objectives.

Activities:

1. Reading the information provided for the lesson (sample words, pronunciation and spelling rules
2. Pronunciation practice of /ay/ in sentences provided for practice
3. Discussion of meanings of lexical materials needed for the lesson
4. Written practice of target spelling concept using fill-in and transformation exercises

Lesson Three - Long **i** in One-Syllable Words

Basic Words: The sound /ay/ as in:

nice	life	time	fine	white	five
ride					
rice	knife		line	write	drive
side					
	wife		nine		
wide					
bride					

Pronunciation: The sound /ay/ is the same as the name of the letter **i**. It is the same as the pronoun **I** and the word **eye**. This is called a tense vowel. Compare the pronunciation of the lax vowel /ĭ/.

Practice making the sound /ay/. Repeat the sentences:

His wife is nice.
White rice in fine.
Her son is five. Mine is nine.
Mike had a nice time.
I like to drive.

Spelling: In one-syllable words, the long **i** is spelled with the letter **i** + a single consonant + the letter **e**. The letter **e** is part of the spelling pattern and does not represent a pronounced sound.

Exercise One: Notice the spelling pattern of the words below. Practice the pronunciation. Use a dictionary to find meanings if necessary. Use words from the list complete the questions.

glide	pride	slime	strive
slide	snide	grime	thrive
crime	gripe	twine	
vice		snipe	

Children play on this in a playground. What is a _____?

This is a feeling of delight in what one has done. What is _____?

This is a surface of thick black dirt. What is _____?

To do this is to complain continually. What is _____?

This is an offense punishable by law. What is _____?

This is partly liquid mud, especially regarded as ugly and bad smelling.

What is _____?

This is the opposite of virtue. What is _____?

This is strong cord or string. What is _____?

To do this is to struggle hard to get something. What is _____?

To do this is to develop well and be healthy. What is _____?

Note: The definitions above come mostly from Longman Dictionary of Contemporary English. Check the dictionary for example sentences and for additional meanings of the same words.

*E*xercise Two: Word Pairs - Can you write a one-syllable long **i** word on the line next to each short **i** word?

(i)	(i)
fill	_____
pill	_____
will	_____
mill	_____
dim	_____
slim	_____
grim	_____
prim	_____
pin	_____
win	_____
spin	_____
twin	_____
rip	_____
whip	_____
grip	_____
snip	_____
strip	_____
kit	_____
quit	_____
spit	_____
lick	_____

Can you add any other pairs?
What is the spelling pattern?
Can words with other long vowels be spelled according to this pattern?
Can you give any examples of words with other long vowels spelled according to this pattern?

Lesson Four - Long <i> in One-Syllable Words - More Long I Spellings

Objectives:

1. Students will recognize examples of variant spellings of the target sound: <-igh>, C+<y>#.
2. Students will describe frequency of these spellings with respect to words spelled according to the short and long vowel patterns.
3. Students will compare spellings of homophones in the context of simplification of archaic spellings, e.g. **rite, nite**, and the short word rule.
4. Students will explore irregular long and short vowel spellings in words such as <live>, <give>, <wind>.

Materials:

Study and exercises designed for the target concepts and objectives

Activities:

1. Reading and discussion of the information and example words provided in the lesson
2. Pronunciation practice of words of list of words with the same spelling pattern: C+<y>#
3. Written practice of words with target sound and spelling in fill-in exercises

Lesson 4 - Long **i** in One-Syllable Words - More Long **i** Spellings

There is always more than one way to spell the English vowel sounds. The long and short vowel patterns cover many of the words of English, particularly one-syllable basic vocabulary words. However, there are other spellings, which are less frequent and sometimes limited to a small number of words.

The sound /ay/ as is **kite**. Use **-igh** to spell /ay/ at the end of a word or in the middle of a word before /t/.

fight	high	***height***
light	sigh	
might	thigh	
night		
right		
sight		
bright		
fright		

The sound /ay/ as in **kite**. Use the letter **y** to spell /ay/ at the end of the following short words:

shy	by
sky	my
fly	why
ply	
sly	***buy***
spy	***guy***
cry	
dry	
fry	
pry	
try	

The sound /ay/ as in **kite**. Use **-ie** or **-ye** to spell /ay/ at the end of these short words:

	bye
die	dye
lie	lye
pie	
	rye
tie	
vie	

English has words with the same sounds, with different meanings and different spellings. Do you see any on this page? Can you ***write*** any others with /ay/?

Antonyms: Write words with opposite meanings.

1. laugh _____
2. wet _____
3. give up _____
4. live _____
5. sell _____
6. low _____
7. day _____
8. dark _____
9. wrong _____

Fill in the blanks with /ay/ words.

1. She bought _____bread and apple _____.

2. He was dressed very formally. He wore a blue suit with a _____shirt and a red _____.

3. A secret agent is a _____.

4. How tall is he? Do you know his _____?

5. She is afraid of _____. She can't climb to the top of the mountain.

6. Someone who is very honest doesn't usually _____.

Long vowel pronunciation - short vowel spelling pattern.

The sound /ay/ as in **kite**.

child	bind	pint
mild	find	
wild	hind	
	mind	
	rind	
	wind	
	blind	
	grind	

- What letters are common to these words?
- Compare the spelling pattern to the short vowel spelling pattern. Do you notice the short vowel spelling pattern?
- One-syllable words that have /ayld/, /aynd/, are spelled using the short vowel pattern: single **vowel letter + consonant(s).**

These phrases all are common English expressions. Underline the long **i** words, and then write them on the lines

1. out of sight, out of mind _____
2. the blind leading the blind _____
3. grind to a halt _____
4. finders keepers, losers weepers _____
5. lead someone on a wild-goose chase _____

****

Short vowel pronunciation BUT long vowel spelling pattern.

Where do you **live**?
How much money did you **give** to the clerk?

- Note that in English words do not commonly end in the letter **v**. The **e** is not the sign of a long vowel, as in the long vowel pattern.

****

Short AND long vowel pronunciations

live /lív/ (v)	You **live** in New Jersey now. You **lived** in different countries before you came here.
live /layv/ (adj)	Look, it's a real **live** elephant.
	I saw a **live** broadcast of a concert from Lincoln Center on TV. The concert was not taped.
wind /wínd/ (n)	The **wind** was blowing and the snow was falling on the cold winter morning.
wind /waynd/ (v)	You have to **wind** some clocks. In some cars, you **wind** the windows up and down using a handle.

Lesson Five - Consonant Doubling

Objectives:

1. Students will recognize the long vowel pattern (VCV) when adding <-ed>, <-er>, <est> and the need for consonant doubling to make the short vowel spelling (VCC + affix).
2. Students will pronounce and write words with both long and short vowels and the target affixes.

Materials:

Exercise sheet designed for the target concept and objectives

Activities:

1. Writing inflected forms of words given on the exercise sheet
2. Applying rules for long and short vowel spellings when adding affixes
3. Reading and pronouncing the base forms and the inflected forms on the completed exercise sheet

Lesson 5 - Consonant Doubling

- Double the final consonant before adding **-ed, -ing, -er, -est** to one-syllable words with short vowels spelled according to the short vowel pattern if the word ends in a single consonant spelled with one letter.

Write the **-ed** and **-ing** forms of these verbs.

dim	_____	_____
pin	_____	_____
grin	_____	_____
chip	_____	_____
dip	_____	_____
rip	_____	_____
skim	_____	_____
trim	_____	_____

Write the **-er** and **-est** forms of these adjectives.

big	_____	_____
dim	_____	_____
grim	_____	_____
prim	_____	_____
slim	_____	_____
trim	_____	_____
thin	_____	_____
fit	_____	_____

Add **-er** to these words to form nouns.

swim	_____	_____
win	_____	_____
dim	_____	_____

- If a speller does not double the consonant, the vowel letter **e** or **i** in the ending acts like the silent **e** in the long vowel pattern. In other words, the vowel immediately following the single consonant indicates that the preceding vowel is the long sound.

- Notice the spelling of the **-ed** and **-ing** forms of these verbs:

gr**ip**	gri**pp**ed	gri**pp**ing
gr**ipe**	gri**p**ed	gri**p**ing

- To write the -ed form of words ending in **e**, you just add **d**. To write the **-ing** form, drop the **e** and add **-ing**. The vowel **i** does the job of the vowel **e** in the **ing** forms.

Write the **-ed** and **-ing** forms of these verbs.

smile	_____	_____
pine	_____	_____
whine	_____	_____
dine	_____	_____
wipe	_____	_____
gripe	_____	_____

Write the **-er** and **-est** forms of these adjectives.

nice	_____	_____
wide	_____	_____
fine	_____	_____
white	_____	_____
wise	_____	_____

Add **-er** to these words to form nouns.

write _____ _____

dine _____ _____

drive _____ _____

ride _____ _____

glide _____ _____

Lesson Six - Spelling Multisyllabic Words by Syllable Pattern

Objectives:

1. Students will identify long and short <i> vowel sounds in two-syllable words.
2. Students will write and correctly spell two-syllable words from dictation.
3. Students will identify spelling patterns in two-syllable words with long and short <i>.

Materials:

Study sheet designed for the target concepts and objectives

Activities:

1. Listening to and write words with target sounds and spellings.
2. Exploring lists of words and discuss the sound and spelling patterns.

Lesson Six- Spelling Multisyllabic Words by Syllable Patterns

1. Short vowels are normally found in stressed syllables that end with a consonant. When the word is written, the consonant is doubled. The pattern is (C)VC-CV as in the following words:

kitten
scissors
silly
million
ribbon
different
cinnamon

liquid /lĭkwĭd/ <qu> is the equivilent of CC

However, sometimes short vowels occur in the first syllable of words without double consonant letters such as:

limit
river
timid
visit

***min**ute* very exceptional short **i** spelling

2. Long vowels generally occur in syllables that end in vowels. In 2-syllable words, the second syllable may begin with either a vowel or a consonant as in the following examples:

idea
tiny
tiger
lion
quiet
diet
dial
trial

Long vowels may occur in final syllables of 2-syllable words, and they may be spelled with the common long vowel spelling VC**e** or with other long vowel spellings found in

one-syllable words:

polite	delight
arrive	
beside	remind
sublime	
divine	

Lesson 6A - Long and short spelling patterns in syllables with long and short <i>

I. Short **i** in 2-Syllable Words

Words:		Rules:
si**mp**le single whisper		Doubling is not necessary since there are two consonant letters
little middle scribble	glitter slipper	Doubling occurs to avoid VCV
triple **nickel**		These words are slightly different spellings: no double **p; -el** not **-le**

- Compare spoken word and written word.
- Can you explain the short <i> spelling in the first syllable of these words?
- Without the double consonant the spelling would indicate a long vowel in **glitter, slipper**
- Notice that -C**le** = / él/

****

II. Long **i** in 2-syllable words

Words:

arise	awhile
advise	inside
define	polite
decline	

- Can you explain the final **e** on these words? There is an **e** at the end of these words to indicate that the preceding vowel in long.

Lesson Seven - Syllable Stress and Spelling

Objectives:

1. Students will be able to recognize full and reduced vowels in multisyllabic words.
2. Students will be able to analyze spelling features multisyllabic words with long or short <i> in a stressed syllable.
3. Students will explore short <i> sound in words ending with <-age#> spelling.

Materials:

Study sheet and exercises designed for the target concepts and objectives

Activities:

1. Reading words aloud
2. Listening to words; comparing vowel quality in stressed and unstressed syllables
3. Identifying the vowel sounds in stressed and unstressed syllables
4. Reading the rules for stress placement and vowel reduction
5. Writing words showing stressed syllables and reduced vowels
6. Reading and writing words with <-age#> spelling

Lesson Seven - Syllable Stress and Spelling

1. different	6. criticize
2. difficult	7. sympathize
3. victory	8. license
4. dignity	9. science
5. principle	10. analyze

Analyze the number of syllables; vowel sounds in stressed and unstressed syllables.

- In English, every 2-syllable word has one stressed syllable. The vowel in the stressed syllable is full or unreduced. You should hear a vowel sound that you can identify as the same as a vowel sound in a one-syllable word. In a word of more than two syllables, one syllable has the main stress. Another syllable has secondary stress, which is less strong. The rest are unstressed.

- Vowels in unstressed syllables are not as strong and are not full; they are weak and reduced. Usually the sound is /é/ but may sound like a short **i**.

Rewrite the words from the list above. Under line the stressed syllable. Indicate which vowels are reduced using the schwa symbol.

1.	6.
2.	7.
3.	8.
4.	9.
5.	10.

- Discuss strategies for remembering the spellings of unstressed vowels: **spelling pronunciations.** Keep in your memory a pronunciation that reflects the full vowel spellings, but remember to use normal pronunciation in speech.

Short **i** in Unstressed Syllables

In words ending in /ĭ ë/ or /ĭ ŭ/, the spelling of the /ĭ/ is the letter **a**. These are instances of reduced vowels in unstressed syllables.

image	delicate
message	climate
village	private

BUT:
college
knowledge
privilege

- Probably the **-age** spelling of this ending is the most common.

- Complete the following sentence and analyze the spelling of the word you wrote in the blank.

  I am studying the English _____.

Lesson Eight - The Sound-Spelling Relationship in Word Forms

Objectives:

1. Students will recognize the short and long <i> sound contrast in word pairs such as <wise>, <wisdom>.
2. Students will recognize the short and long vowel spellings in word pairs.
3. Students will practice recognizing and pronouncing pairs of words with long and short <i> in stressed syllables.
4. Students will write words with the target sound, stress and spelling patterns.
5. Students will pronounce, write and understand the meaning of base and derived forms of words with long and short <i>.

Materials:

Study sheets and exercises designed for the target concepts and objectives

Activities:

1. Reading, writing, and discussing words with the target sounds and letters
2. Practicing writing words with the target sounds and spellings by doing written fill-in exercises
3. Discussing rules of stress placement and consonant substitution.

Lesson Eight - The Sound-Spelling Relationship in Word Forms

1. Compare the spelling and the pronunciations of the following words:

wise	wisdom
child	children
wild	wilderness

Rewrite the words that have the long **i**:_____

_____

- Notice that the words **wise** and **wisdom** follow rules for spelling long and short vowels in stressed syllables: VCe and CVC. Also notice that the other word pairs provide no indication in the spelling of the long and short vowel. Did you remember that **ICC** is a special long **i** spelling? Can you write any other long **i** words with this pattern?_____

2. Pairs of word forms with long and short vowel sounds in stressed syllables are not uncommon in English. Here are some other examples:

crime	criminal
mine	mineral
type	typical
cycle	cyclical

- Do you know which words have the long **i**? Practice writing them:

_____

- What is different in **type** and **cycle**?_____
- When you listen to the words with the **-al** endings, you should hear **three** syllables. Can you identify the stressed syllable? Which one is it?_____
- The long **i** in the single-syllable word becomes a sho.t **i** in the stressed syllable of the related word with the ending. There is **no** spelling change to indicate the short vowel.

Practice writing the words:

1. A person who is guilty of a crime is a _____.
2. A place under the ground from which gold, tin, or coal are dug is a _____. Gold, tin, and coal are _____.
3. Summer, fall, winter, spring is the _____ of seasons throughout the year. Events (like the seasons) that happen in a regularly repeated order are _____.
4. Have you noticed the many _____ of flowers growing in the gardens in the spring? Tulips and daffodils are _____ spring flowers.

3. There are other examples of pairs of words with a long vowel sound in a base word and a short vowel sound in a related word with a suffix and a different number of syllables.

- In these **three-syllable** words, the short vowel occurs in the stressed syllable, just before the suffix. The spelling does **not** reflect the change in the vowel sound from long to short.

- Notice that the suffix may cause a change in the consonant sound that precedes it. That change in pronunciation is also **not** reflected in the spelling.

- Here are the examples:

precise	precision
revise	revision
ignite	ignition

- Sometimes the related words have the long/short vowel variations with a consonant substitution. In these examples, the **-de** is dropped and **-sion** is added:

collide	collision
divide	division
provide	provision

In the next examples, both words have related forms. They have a short **i** in the stressed syllable just before the suffix **-tion**. The consonant **b** dropped, and **p** is used instead. Can you write the new forms?

describe _____

prescribe _____

Practice writing the words.

1. Two people bought a lottery ticket together and they won! They _____ the prize money. The _____ of the money between them made them both very happy and very rich.

2. Many people were hurt when the two trains _____. The _____ between the trains going in opposite directions occurred a few months ago.

3. When you want to start your car, you must have the key in the _____. When you go to a gas station, you must not light a match because gas could _____ and you could cause an explosion.

4. The school _____ many services to the students, such as counseling and tutoring. The _____ of services is an important goal of this school.

5. When someone writes a composition, he/she tries to use _____ vocabulary to express his/her ideas clearly. It is a good idea to try for _____ in the use of words.

6. I would like you to _____ a special place in your country. I like to listen to _____ of faraway places that people have enjoyed visiting.

7. A doctor _____ medicine for sick people. Then they take the _____ to the pharmacy and have it filled.

8. Students have to _____ their essays. Making _____ carefully usually improves their writing.

Appendix C

SUPPLEMENTAL MATERIALS

Session #3 - March 19, 1996 - Vowel Contrasts: Different Sounds/Same Spellings

Practice pronouncing these words.

/uw/ (o͞o)	/ʊ/ (o͝o)
food	
	good
mood	hood
	wood/would
roof	
proof	
goof	
	book
	cook
	hook
	look
	brook
	crook
fool	
pool	
tool	
spool	
	wool
room	
bloom	
gloom	
broom	
groom	
noon	
soon	
spoon	
hoop	
loop	
troop	
boot	

	foot
hoot	
loot	
moot	soot
root	
toot	

Session #3 - Dictation Answer Sheet
March 19, 1996
Name_____

Short Vowels
1. Circle the word you hear.

Short a /æ/	**Short o** /a/	**Short u** /é/
lack	lock	luck
lag	log	lug
tap	top	
hat	hot	hut
black	block	
rack	rock	
	pop	pup
cap	cop	cup
rat	rot	rut
crash		crush
track		truck
stack	stock	stuck
rag		rug

fax fox

II. Write the word you hear in the correct column.

Short a	**Short o**	**Short u**
/æ/	/a/	/é/

Session #3

English Vowel Letters and Sounds: Long & Short Vowels

Letters	**A**	**E**	**I**	**O**	**U**
	/ey/	/iy/	/ay/	/ow/	/(y)uw/
Sounds					
	/æ/	/è/	/ɪ/	/a/	/é/

What vowel sound? What vowel letter(s)?

Take cakes.

We see these trees.

I like white wine.

Phone home.

Tulips bloom in June.

NOTES & QUESTIONS

Often in one-syllable words, long vowel sounds are spelled with ***a single vowel letter + consonant + e.***

In the sentences above there are three examples of digraphs: 2 vowel letters = one vowel sound. Which words have the digraphs?

Which word from the sentences contains more than one syllable?

Which word contains only 2 letters? What is the vowel letter?
What is the vowel sound?
Session #3

English Vowel Letters and Sounds: Long & Short Vowels

Letters	**A**	**E**	**I**	**O**	**U**
Sounds	/ey/	/iy/	/ay/	/ow/	/(y)uw/
	/æ/	/è/	/ĭ/	/a/	/é/

What vowel sound? What vowel letter(s)?

Take cakes.

We see these trees.

I like white wine.

Phone home.

Tulips bloom in June.

NOTES & QUESTIONS

Often in one-syllable words, long vowel sounds are spelled with ***a single vowel letter + consonant + e.***

In the sentences above there are three examples of digraphs: 2 vowel letters = one vowel sound. Which words have the digraphs?

Which word from the sentences contains more than one syllable?

Which word contains only 2 letters? What is the vowel letter?
What is the vowel sound?

Appendix D

SESSION LIST AND CALENDAR

Session	Date	Content
1	March 5, 1996	Introduction to the spelling group Lesson One: Facts about English Spelling and Pronunciation
2	March 12, 1996	Long/short vowel sound contrasts Lesson Two: Short I in One-Syllable Words
3	March 19, 1996	More vowel contrasts The short vowel spelling pattern Lesson Three: Long I in One-Syllable Words
4	March 26, 1996	Variant spellings of long I in one-syllable words Lesson Four: Long I in One-Syllable Words - More Long I Spellings
5	April 9, 1996	Consonant doubling and <e>-deletion in inflectional spellings Lesson Five: Consonant doubling Introduction to spelling words with more than one syllable
6	April 16, 1996	Student feedback on spelling lessons Lesson Six: Spelling Multisyllabic Words by Syllable Patterns
7	April 23, 1996	Long and short spelling patterns in syllables with long and short I (Continuation of lesson six) Lesson Seven: Syllable Stress and Spelling
8	April 30, 1996	Derivational Spellings Lesson Eight: The Sound-Spelling Relationship in Word Forms
9	May 7, 1996	More student feedback